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ART. I.—*An Essay on Tetanus, founded on Cases and Experiments.* By JOSEPH SWAN, Member of the Royal College of Surgeons, and Surgeon to the Lincoln county Hospital. London, 1825.

IN the whole range of Medical Science there is no disease which exhibits more strong and expressive pathognomonic features than the subject of the above essay. Whether we regard the obscurity of its nature, the cruel severity of its symptoms, or the uniformity of its fatal result, it surely presents, even to the veteran in medicine, an appalling aspect. Precisely in the same degree should it be a subject of observation and inquiry. Some, however, may regard the ill success which has hitherto attended our labours in relation to this disease, as a circumstance indicative of our inability ever to develope the seat and immediate cause of its morbid phenomena. Had our *physiological* investigations already reached the limit prescribed to our sentient and rational powers, it would be wise in us to abandon at once the pursuit of an object which has foiled the attempts of the most discriminating. With the same data we cannot expect to accomplish

more than those who have immediately preceded us; but when we consider that, particularly for the last few years, our knowledge of the offices performed by the constituent organs of the system, and their relation to each other in health, has been rapidly progressing, we may, without arrogating to ourselves any intellectual superiority, expect to effect a corresponding advancement of the collateral branches of medical science. That department of physiology which has a direct bearing upon the pathology of the disease in question, has recently been cultivated with peculiar zeal and success. The labours of Bichat, Philip, Brodie, Bell and others, have accumulated numerous facts in relation to that most obscure class of vital phenomena, those of the nervous system, and although they are not as yet sufficiently numerous to admit of being reduced to scientific arrangement, they certainly offer many suggestions to direct our inquiries, particularly in relation to the diseases of the nervous and muscular systems, and also to recall us from the pursuit of vain speculations.

It is the importance of the subject, and the occasion which we think is presented of advancing the pathology of the disease to a correspondence with what we now know of the healthy functions of the nerves and muscles, rather than the character of the essay which we are about to examine, which induces us to employ it as a precursor and apology for an attempt of our own. We will not say, however, that the suggestions of our author are not worthy of consideration. They certainly come from a respectable source, and are sanctioned by the approbation of those whose opinions are not to be passed over in silence. We would by no means pre-occupy the minds of our readers against the peculiar views of our author, but proceed immediately to present such an analysis of his facts and inferences as shall enable each to pass an unbiassed judgment upon the merits of the work. We shall then offer our own remarks in relation to the correctness and importance of our author's conclusions, and finally subjoin such observations in relation to the pathology and treatment

of the disease in question, as may render this article more complete and useful to our readers.

The following extract from the author's preface will acquaint the reader with the object which he proposes:

"The opinions I have stated in the following pages, were formed from the consideration of appearances which presented themselves to me on dissection. The first time I had an opportunity of making a complete examination of the body of a person who had died of Tetanus, was in May, 1823. I then perceived an unhealthy appearance of many of the ganglia of the grand sympathetic nerves; as this was quite unexpected, for a similar one had not been recorded by medical authors, I could not form a decided opinion respecting it, as will appear from the following passage.* 'In this examination, no part of much importance, except the ganglia of the grand sympathetic nerves, decidedly deviated from the healthy state; and, in the present state of our knowledge, I conceive it difficult to determine whether the appearances were in any way connected with the disease; or were caused entirely by the submuriate of mercury, the opium, or the spirits of turpentine.' In the following November, I dissected the body of another person who had died of this disease, and found the ganglia of the grand sympathetic nerves having a similar appearance. I now began to think that the altered state of the ganglia might be the cause of the disease; and I soon determined on making experiments with a view of either confirming or refuting this opinion; but I was then prevented from executing what I had proposed. I had, however, in the mean time, the satisfaction of finding that similar appearances had been observed by Dr. Aronssohn,† at Strasburg; and whilst I was making some experiments, a case occurred to my friend Mr. Thomas Macaulay, who very kindly afforded me the opportunity of being present at the examination of the body after death, when I was again enabled to witness appearances in the ganglia of the grand sympathetic nerves very similar to those I had before seen. M. Andral Fils‡ has also discovered a great redness of the semilunar ganglia in a patient who laboured under fever, and died with symptoms of tetanus.

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* An Inquiry into the Action of Mercury on the Living Body, page 12. Second Edition.

† Lobstein de Nervi Sympathetici Humani, Fabrica, Usu et Morbis, page 152.

‡ Clinique Medicale, tome i, page 419.

"When I had nearly finished my observations on this disease, I read the opinions of Dr. Good,* and also those of Mr. Abernethy.† The latter gentleman says, 'When the irritable and sloughing state of the wound shall have gone off, when healthy granulations have formed, and the cicatrix is rapidly advancing, in this state tetanus may occur. How are we to account for this? I am inclined to think that it is to be accounted for in the following manner. We know that the disposition to disease occurs long before the action of the disease takes place. In the painful and bad state of the wound, the disturbed state of the nervous system has produced disease of the digestive organs which reacted on the nervous organs; so that the disorders have reciprocally aggravated one another; so that at last, even though the wound is drawing to cicatrization, or has even healed, and there is no longer any local irritation, the disposition to tetanus, from the established irritation of the cerebral and visceral functions, comes into activity. Perhaps those who know nothing of the opinions I have formed on subjects of this kind, may not thoroughly understand what I mean. I propose this as a question to surgeons, whether the disordered state of the digestive organs, established during the irritative state of the wound, may not be the occasion of tetanus when that irritative state has ceased?'

"If what I have written amounts to the same as is expressed in the preceding paragraph; if, likewise, some of the opinions I have advanced are the same as those advanced by Dr. Good, and there is any merit in the following pages, I shall willingly rest satisfied in having proved by dissection and experiment, what those gentlemen have so ingeniously proposed."

In chapter I., on constitutional irritation, the author adduces a number of cases and experiments in illustration of the kind and degree of influence which local injuries exert upon the organs which derive their nerves from the ganglionic system, as the heart, lungs, and digestive organs. This is evidently a more general proposition, and preliminary to those facts and arguments by which he substantiates his opinion, that in tetanus the local disease first influence the ganglia of the sympathetic, from which as a centre the morbific princi-

* Lancet, vol. v. page 72.
† Study of Medicine, vol. iii. page 323.

ple is diffused through the system. As the cases are similar, and illustrate a principle common to them all, it will be sufficient if I quote but one, that our readers may know the character of the data upon which our author proceeds:

"*Case.*—Susanna Graham, a stout-looking girl, æt. seven years, was burnt by her clothes catching fire on the 20th of August, 1823, at noon. The thighs, and arms and back were the parts affected; but some of them appeared to be burnt deep. The skin of the abdomen was not burnt. She did not appear to suffer much pain. Mild ointment was applied to the affected parts.

"21st. At ten A. M. she complained of pain in her belly. She had vomited several times. She wandered a little and was cold, and her face was death-like. She said she remembered me. The pulse could not be felt in either arm. Purging medicines were given her, but they did not remain in the stomach.

"In the evening the pulse was perceptible, but she appeared weaker and was quite insensible; the pupils of the eyes were much dilated, and did not contract on the approach of light, but she could see, for she attempted to blow out the candle. Six leeches were applied to the temples. She died at one A. M. on the 22d.

"*Examination.*—The lungs were very purple and loaded with blood. There were spots of ecchymosis behind the posterior mediastinum on the left side; there was a great vascularity on the outside of the aorta; there was some fluid in the pericardium.

"There was an increased redness on some parts of the omentum, but the peritoneum appeared healthy. The liver was generally pale, and especially on its concave surface. There were some spots of redness on the villous coat of the stomach, but I could not decide that they amounted to disease. About six inches of the jejunum were highly inflamed.

"All the ganglia of the grand sympathetic nerves in the chest were vascular. On the right side, the semilunar ganglion and all the rest of the ganglia in the abdomen were very vascular. On the left side, the semilunar ganglion and the first in the abdomen formed by the continuation of the grand sympathetic nerve, were very vascular, but the others were not. The nerves of each axillary plexus were very vascular. The sciatic nerves within the pelvis and the anterior crural

nerves were vascular, but not near so much so as the axillary plexus.

"After every accident in which the constitution sympathises with the injured part, I believe, the ganglia of the grand sympathetic nerves become irritated, and the functions of the parts supplied by them with nerves are disturbed in consequence. The action of the heart is increased in proportion to this degree of irritation in them, so long as it continues moderate.

"Though an injury in the first instance has been slight, or such as does not usually occasion much disturbance; yet if the constitution be irritable, or the body exposed to cold or other causes of disorder, it will produce a very considerable disturbance, not unlike what arises from a more serious injury."

The experiments performed by the author upon living animals are nine in number, and have for their object the illustration of the same principle, viz. constitutional irritation from local impressions through the medium of the sympathetic ganglia:

"*Experiment.*—One portion of oxyd of arsenic weighing thirty-nine grains and three quarters, and another portion weighing twenty-six grains, were moistened with water, and inserted into a wound in the back between the shoulders of a very large dog, on the 18th of April, 1823, at half past seven, A. M. Soon after I laid my hand over the wound so as to press the arsenic to the back, and he immediately had twitchings in different parts of the body. He ate with a good appetite. Involuntary contractions of the muscles of the face continued throughout the day, so that the teeth would frequently be brought close together with a snap. He has neither vomited nor purged.

"19th. He is much the same as yesterday. Twenty-five grains of powdered oxyd of arsenic were given him on a piece of meat at a quarter before eight, A. M. At half past nine he had not vomited. At one he had vomited several times, and, I believe, nearly the whole of the arsenic was rejected, as the symptoms continued just the same as before he took it.

"20th. He is much the same. He has not vomited again. He has no appetite. The same twitchings of the face continue.

"23d. He is very weak. An abscess broke on the right

side, and as it was presumed no advantage would result from prolonging his existence, he was hanged.

"*Examination.*—All the ganglia of the grand sympathetic nerves were inflamed. The par vagum and nerves about the face, had a greater redness than usual, and a slighter degree of it existed in the axillary plexus. The sciatic nerves were natural. All the thoracic viscera were healthy, but there was an increased vascularity on the outside of the aorta. There appeared more than usual redness on the peritoneum of the stomach, but not on that of the other viscera. The villous coat of the stomach was ulcerated in several places, and that of the small intestines presented an appearance of red spots. There were red spots and bloody mucus on the inner coat of the rectum. Neither the brain, nor the medulla spinalis, nor their membranes had any increased vascularity. The ganglia of the spinal nerves were more vascular than natural, but those formed by the fifth pair had not any increased vascularity.

"The largest piece of arsenic weighed full thirty-eight grains, and the smallest twenty-four grains. There was much inflammation on the skin to some distance round the place where the arsenic was inserted. The abscess had formed near the shoulder."

Several other experiments were performed by inserting arsenic and gamboge in the flesh of living dogs with similar results:

"*Experiment.*—1815, Jan. 20th. A large bitch received a compound fracture of the tibia and fibula of the left leg, at a quarter past ten, A. M.

"At half past eight, P. M. She does not appear to suffer much, and has eaten with a tolerable appetite.

"22d. Yesterday and to-day she has eaten very little. This morning she was thirsty, and had frequent involuntary contractions of most of the muscles of the body. She was hanged at noon.

"*Examination.*—This took place at one, P. M.

"All the ganglia of the grand sympathetic nerves in the abdomen had an increased vascularity, but it was the greatest in those of the left side. The first thoracic ganglion of the left side had a slightly increased vascularity; that of the right side was quite white.

"The viscera of the thorax were sound.

"The viscera of the abdomen appeared too vascular. The stomach was much contracted, and almost empty; its villous coat was red, but not diseased. The villous coat of the small intestines was very highly inflamed, but not ulcerated. The mucous coat of the large intestines was too red. All the absorbent glands appeared in a state of irritation.

"There was a transverse fracture of the bones. The periosteum was separated to a short distance, and much thickened. There was much inflammation of the cellular membrane, and a corresponding serous effusion a little above the wound, and likewise as low as the os calcis. There was a much greater vascularity in the groin on the left side than on the right. The cellular membrane surrounding a small portion of the saphenus nerve near the fracture was inflamed; the remaining part of this nerve, and all the anterior crural nerve, were quite healthy. There was the same appearance in the branches of the sciatic nerve near the fracture, but there was rather more vascularity in the left than in the right sciatic nerve."

In chapter II., the author enters upon the consideration of idiopathic tetanus. This species he regards as differing from the traumatic only in its remote cause, and adduces cases to prove that its more immediate source is a morbid condition of the sympathetic system. The first case, obtained from Mr. Thomas Macauley, is one of a child of ten years. The disease was apparently induced by cold. It exhibited the usual train of symptoms, and under a most puerile and irresolute treatment, terminated fatally on the third day. The following were the morbid appearances on examination:

"*Examination.*—On opening the abdomen a considerable volvulus was found in two portions of the small intestines. The intestinal canal was laid open through its whole extent. The stomach exhibited nothing remarkable, and contained only a little fluid and a few portions of the submuriate of mercury. The villous coat of the small intestines throughout had marks of having been in a state of great irritation; many very vascular patches were observed on it, and it was loaded with green and yellow slime and mucus; at the superior extremity of each volvulus, several lumbrici were lodged, and others were found in different parts of the canal. The colon was irregularly distended with air, and presented rather a curious appearance; its mucous coat was healthy,

and contained a few ascarides; the rectum contained fæces which had not an unhealthy character. All the absorbent glands were enlarged, but those in the abdomen were very vascular, and the mesentery throughout had the same appearance of undue action and irritation. The bladder was thicker than usual, but was not otherwise unhealthy, and contained urine.

"The lungs were florid and loaded with blood, but not unhealthy. A patch about the size of a shilling, and having the appearance of effused lymph, was found on the pericardium covering the apex of the heart.

"The ganglia of the grand sympathetic nerves were examined with very minute attention. In all of them there existed decided marks of irritation. The vessels usually pale and colourless were injected with red blood, and the same was observed in some of the intermediate portions of nerve. The vascularity could be distinctly traced before their removal from the body, and immersion in cold water for some time did not diminish it. The left semilunar ganglion exhibited a few vessels, but the right was injected in a beautifully minute manner, quite as much so, when seen through a magnifying glass, as the conjunctiva in a state of high inflammation. The same distinction, though not in the same degree, was observed between the two sides in all the portions of the grand sympathetic nerves which were examined.

"On opening the head, every part of the pia mater was found to be minutely injected with blood. The substance of the brain had a healthy appearance. Some fluid was in the ventricles and at the base; on the removal of the brain a quantity was found, equal to about two ounces. On hanging the head over the edge of the table the same fluid kept dribbling from the spinal canal.

"The spinal canal was laid open through its whole extent. The sheath of the dura mater seemed to be distended with fluid, but on being divided, was found to contain only air. The pia mater presented exactly the same appearance as that of the brain. The medulla itself was perfectly healthy.

"After death the limbs of the right side remained quite stiff, but those of the left were in a considerable degree relaxed.

"From the quick termination of the violent symptoms, the following case may not be regarded as one of tetanus, but the spasms were exactly the same as I have ever witnessed in the most violent form of the complaint."

The author also introduces a case translated from Lobstein

De Nervi Sympathetici Humani Fabrica Usu et Morbis, which, as it is brief, we transcribe:

"*Case.*—A man,* æt. forty-seven years, had a fibro cartilaginous tumour removed by amputation, which adhered loosely to the spine. After an interval of two years he came a second time to the hospital, requesting to have another tumour removed, which had made its appearance, and the highest part of the skin of which was inflamed and ulcerated. Having first taken a purgative, and at the same time caught cold in the rainy season of October, he was immediately seized with trismus and opisthotonos, which in the space of two days destroyed him, after every medicine had been tried in vain.

"On opening the body, nothing was found but a vascular network filled with blood on the surface of the medulla spinalis, and a quantity of serum effused within the sac formed by the dura mater; and a very distinct inflammation of the semilunar ganglia."

Several experiments are also related, in which artificial tetanus was produced by the use of nux vomica. The morbid appearances are stated to be similar to those presented by the spontaneous cases.

In chapter III., on Traumatic Tetanus, the author has the following remarks:

"If traumatic tetanus always followed a very painful or extensive wound, there would be an apparently satisfactory reason for its violent symptoms, but as it likewise supervenes on a trifling injury, or a wound that is nearly or entirely healed, there is the greatest difficulty in comprehending how it is produced.

"With a view of removing as much as possible this obscurity in the production of traumatic tetanus, I have been induced to inquire how the body is usually affected after accidents. From that inquiry I have been led to state, that when a severe injury has been received, the ganglia of the grand sympathetic nerves become irritated, and consequently the parts to which they distribute nerves. When the constitution is healthy, I believe the irritation of the gan-

* Lobstein De Nervi Sympathetici Humani, Fabrica, Usu et Morbis, page 152.

glia goes off in a few days, and then the parts supplied by them with nerves return to a state of quietude, and again perform their healthy functions.

"When the ganglia of the grand sympathetic nerves have been thus affected, and the irritation has subsided, an unhealthy action in the wound may excite a fresh irritation in them. Or even if the wound be healed, the passions, improper food, and other causes, may continue, reproduce, or increase the disordered state of the organs receiving nerves from the ganlia, and thereby excite a fresh irritation in them.

"When the ganglia of the grand sympathetic nerves have once been in a state of irritation, I believe they are very susceptible of its renewal. When they have become again irritated, we can readily conceive that the irritation may be communicated to many of the cerebral and all the spinal nerves, and from these to the medulla spinalis, and we can then easily comprehend how tetanic spasms may be produced."

The following case being one of some interest we quote it entire:

"*Case.*—November 5th, 1823. Master John Patrick, æt. twelve years, had some serpents in his pocket, which caught fire and burnt the upper and fore part of the right thigh, the penis and scrotum, and a portion of the skin of the abdomen, extending above the navel and a short distance on the left side, but on the right, nearly as far as the spine. He had some fever, but never had vomiting nor any unfavourable symptom until the 14th.

"Mild ointment was applied to the burnt parts; he took saline medicines, and his bowels were kept open with a mixture containing sulphate of soda and senna. His appetite had returned, and the greatest part of the sloughs had separated, and the vacuities caused by them were nearly filled up by healthy granulations.

"On the 13th, he had not any appetite.

"On the 14th, he complained of pain at the stomach and a sore throat, but he could open his mouth very well.

"On the fifteenth the jaw became very much fixed, and he had some slight spasms. He had very great difficulty in swallowing. His head was bent backwards. He did not complain of pain. The sore continued to look well. He took musk, and the following ointment was applied to the sore.

℞ Pulv. Opii ʒij.
Ung. Cet. ℥iv. M.

"16th. The sore appeared quite dry. He was much the same as yesterday. The head was bent towards the right side.

"He died at two, P. M.

"The spasms were almost entirely confined to the face and neck. His breathing was much affected. The functions of the brain were never disturbed. He was well purged on the 13th, but after that no evacuation from the bowels could be produced. He would not allow an enema to be used. Mercury was not given.

"*Examination.*—This took place on the 17th, at half past two, P. M.

"The dura mater adhered to the skull with unusual firmness. When the dura mater was removed, at the top of each hemisphere of the brain, there was a granular appearance, which felt rough. The vessels of the brain were much loaded with blood. The pituitary gland was unusually soft. Every other part of the brain was perfectly healthy.

In the spinal canal within the sheath formed by the dura mater, there was a small quantity of fluid. The vessels of the pia mater, and especially near the cauda equina, were much loaded with blood. The medulla itself felt rather firmer than usual, but it had not the least unhealthy appearance.

"All the ganglia of the grand sympathetic nerves in the chest were very vascular. The right semilunar ganglion was rather more vascular than usual, the left had a pearly appearance, and was entirely free from any mark of blood-vessels. There was a little redness in a few of the other ganglia in the abdomen.

"The right anterior crural nerve had a singular vascular spot on it. The left anterior crural nerve, the right sciatic, and several of the dorsal nerves, which were particularly examined, appeared natural.

"The lungs and heart were sound.

"The peritoneum was quite healthy. The villous coat at the cardiac extremity of the stomach was exceedingly vascular, and on this part there was a large spot of ecchymosis. The bowels contained very little fæces, and had not an unhealthy appearance.

"Many of the absorbent glands in the abdomen had a remarkably red appearance.

"The burn had not destroyed the whole substance of the skin in some parts, and the fat underneath looked perfectly healthy."

The author then "proceeds to make a few observations on some of the *symptoms* of tetanus, and the parts which appear to be implicated in the disease, and then to inquire what inferences may be drawn from them as relating to the most probable method of cure." In regard to traumatic tetanus, our readers will probably recollect that Larrey and others have strenuously urged the early amputation of the injured part from which the disease is supposed to be diffused through the system. Our author, however, is of opinion, that when it has once become general, the centre of diseased action is no longer in the wound, but in the centres of nervous influence, and that the operation, although it may alleviate for a time, does not subvert the disease. This remark accords with our own observation, and, we believe, with the experience of most surgeons.

In drawing his general pathological inferences from the facts detailed in his cases and experiments, the author gives his reasons for not regarding either the brain or spinal marrow as the morbid centre. Although he recognises an increased vascularity of the pia mater of the brain and the spinal cord as among the morbid appearances, he thinks them by no means adequate to the general symptoms, and regards them as rather the effects of the general disturbance. The undisturbed state of the functious of the brain, even in the worst cases, he adduces as evidence of its not being particularly affected. That the spasm of the muscles is produced by an influence exerted through the medium of the nerves he appears to regard as unquestionable, and therefore, having satisfied himself that the cause can neither be seated in the brain nor spinal cord, it seems to be a necessary conclusion that the ganglia of the sympathetic must be the source of the morbid phenomena. The diseased appearances of these ganglia, recorded in the

above cases, &c., furnish, in his opinion, positive proof, in addition to the above negative argument. He further adds:

"No other parts except the ganglia of the grand sympathetic nerves have a similar, or so free, a communication between the nerves supplying the muscles usually affected; and in all the examinations after the death, both in the human subject and the animals killed by the extract of nux vomica, I have found an increased vascularity of some of those ganglia."

The following paragraph we quote as a brief and definite statement of our author's views:

"I do not mean to assert that tetanus is a specific complaint entirely seated in the ganglia of the grand sympathetic nerves, but that the ganglia are the important parts of the nervous system to which the first irritation tends, and from which it proceeds to the rest of the nervous system. The validity of this statement is, I think, most satisfactorily confirmed by the case of Richard Ward.* On dissection the marks of irritation in the ganglia were most decidedly greater on the right side than the left; and during life the tetanic spasms were so violent in the limbs of the right side that the patient had not the least power over them; and though the spasms were very considerable in the limbs of the left side, they were evidently much milder than they were in those of the right; and even after death there was a much greater rigidity of the muscles of the limbs of the right side, than existed in those of the left."

The author remarks upon the dearth of pathological facts in relation to tetanus, and on the consequent empyricism of the several modes of practice employed to check this formidable disease. He does not proffer the facts furnished by himself as sufficiently numerous and important to substantiate a system of practical principles. The inflamed condition of the ganglia, and of the pia mater of the brain and spinal marrow, so characteristic of the disease, in his opinion should suggest the employment to a moderate extent of general and local bleed-

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* See page 51.

ing. Particular attention should be paid to the digestive organs as they appear to form an important link in the chain of morbid communication. He recommends, therefore, the employment of an emetic, and that this should be followed by mercurial purges. He thinks, however, that the alterative effects of mercury on the system would be equivocal, as they are observed to produce the inflamed state of the ganglia which, in this disease, we should endeavour to obviate. Anodyne medicines, as for instance the pulv. ipecac. comp. in frequent doses, are to follow the above evacuants.

The facts which are recorded in the cases and experiments detailed by our author both from their number and their character, whatever fallacy there may be in his deductions, certainly constitute a valuable addition to our stock of data. Although we can not admit the importance which he attaches to them in relation to the particular subject of his essay, yet it is obvious that they may have a pertinent bearing upon pathological questions of a more general character.

The reader will have already perceived that we do not subscribe to our author's peculiar opinions. It will be recollected that the first series of facts adduced are intended to illustrate the influence of local affections upon the organs of the ganglionic system. We must confess that in our opinion this chapter is much more highly honourable to our author's candour, than to his logic, for certainly the circumstances which he brings forward with such an air of confidence, directly militate against his own opinions. Can any thing be more plain than, if local affections uniformly influence the digestive and circulatory organs through the medium of the sympathetic ganglia, that the occurrence of this common phenomenon in those cases in which tetanus supervenes upon the ordinary constitutional symptoms, can explain nothing in relation to the specific character of this disease? If every local impression is communicated to the system in this manner, the fact can be by no means considered as characteristic of tetanus.

But it may be said that our objections do not apply to the

inference in relation to the idiopathic form of the disease. But granting that it results from some cause operating first on the mucous membranes of the digestive organs, and thence communicated to the system through the ganglia; what diagnostic inferences can be drawn from such an admission? We very well know that a great variety of diseases, and among them many which bear no resemblance to tetanus, are communicated through the same medium. Indeed it is the opinion of many, that these organs are the inlet through which all morbid influences are communicated. Certainly then we have accomplished but little toward tracing out the peculiar nature and seat of this disease, by establishing the above fact in relation to it. Our inquiries in relation to the specific nature of any disease can not be productive of utility, until they reach so far as to determine something peculiar to the disease in question, either in relation to its seat, or immediate cause, and which may indicate the remedies adapted to the occasion. Every advance towards this desirable result is certainly important, but our author's investigation of this disease certainly does not extend beyond the point at which common observation had long ago arrived.

We very well know that the ganglia of the sympathetic are the media through which the different parts of the nervous system are connected with each other, and through which they keep up a constant correspondence by which the vital actions of different parts of the system are made to correspond and to conspire to a common office in relation to the general functions. It certainly is not surprising, therefore, that in all diseases which, from having been local, become general, the ganglia should exhibit evidences of disease.

Most of the theories which have been formed in relation to the seat and cause of tetanus have been built upon an assumption, viz., that the muscular fibre both in health and disease is altogether passive, and that it derives not only its stimulus to action from the nerves which are sent to it, but that its contractility or susceptibility of contraction is also

conferred upon it by the nerves diffused through its substance. Haller was the first who clearly stated the question whether the muscles be of themselves contractile, or are wholly dependant upon the nerves for this property. This great benefactor of our science warmly advocated the position that this power is inherent in the muscular fibre. By him it was designated as the *vis insita musculorum.* The contrary opinion, viz., that it is by virtue of the nerves forming a component part of the muscular fibre that this property is bestowed, was advocated with no less ardour and ingenuity by Whytt. It is obvious that the question is one of a general nature involving many other important circumstances. It is not surprising, therefore, that it has continued till this time to be agitated with more warmth and pertinacity than becomes a scientific discussion. We can not, upon the present occasion, even give an abstract of the arguments arrayed upon either side. It may be sufficient to state that, notwithstanding the ability with which Haller vindicated his opinions, the doctrine of the Neurologists has generally prevailed, and particularly in pathological investigations. Indeed the facts which support the belief that contractility is solely derived from the nerves, however equivocal they may be, are certainly the more obvious and palpable, as for instance, the large proportion of nervous filaments generally distributed to the muscles; the paralysis of a muscle uniformly resulting from the division of its nerve; and the influence of morbific and remedial agents upon the muscular fibre, through the medium of the nerves. In pathological speculations, this position has been unconsciously admitted even by those who have not acknowledged it in physiology; hence those nosologists, who have divided diseases into classes corresponding to the several functions, have not recognised the muscular system as being at all distinct in regard to its diseases, from the nervous. Dr. Good has no class of diseases belonging to the muscular system.

In relation to the above question, however, the opinions of physiologists have within a few years undergone a remarkable revolution. No one has done more to effect this change than Dr. Philip, and particularly in his experimental investigation of Le Gallois' Memorial. If the facts adduced by him and others, who are directing their attention to this subject, do not lead to conviction, they certainly give a preponderance to the opinion that for their contractility or susceptibility of contraction, the muscles are no way dependant immediately upon the nerves. Those, however, whose contraction is under the controul of the will, do ordinarily derive their only *stimulus* to the exercise of this power through the medium of the nerves, although susceptible of impressions from other agents and through other media.

The following reflections which we will offer on this subject may have occurred to others, and may in some form have been given to the public, but if so, we are not aware of it.

If the vital property, essential to contractility and motion, be supposed to reside only in the nervous tissue diffused through the muscles, then is the muscular substance, in relation to contraction, a mere mechanical instrument, as are the tendons and cartilages; for let it be but in any shape admitted that the muscular fibre receives an impression from the nerves, by which it is made to contract otherwise than mechanically, and the position of muscular contractility is obviously at once established, for it must then be the result of some peculiar vital property, which is even more than we demand. Sensible of this, the neurologists have, strenuously endeavoured to account for the phenomenon on mechanical principles. As the tenuity of the nervous tissue is such that it obviously is not adequate to any direct effort upon the muscular fibres sufficient to produce the effect observed, they have, therefore, supposed the employment of certain mechanical principles by which the power may be indefinitely multiplied. The mechanical powers, hydraulic, and pneumatic principles,

have been successively resorted to, but as the employment of no one of them rests upon a single fact, but is merely suggested by the necessity of the case, and to complete an hypothesis, later physiologists have rejected them all; chemical principles have also been used with similar success.

Electricity has, however, of late been employed with at least more plausibility, and as we are not yet fully acquainted with the powers of this agent, we can not with equal precision reply to what is but vaguely advanced. Granting, however, that there is a principle of this kind generated in the brain, or put in motion by a certain arrangement of parts, and that this is conveyed through the system to produce the phenomena of life by the nerves, for we are ourselves disposed to believe that this agent is employed in the animal system, yet the arrangement of parts in the muscles, by virtue of which this agent causes them to contract, is no less important than that of the brain by which it is supposed to be put in motion, nor than that of the nerves by which it is supposed to be transmitted. Hence it appears that there must exist in the muscles either some peculiar vital property, which we might call vital attraction, and that this is excited to action by a stimulus conveyed through the nerves; or that there is a peculiar arrangement of parts or constitution of matter, unlike any thing in dead matter, bearing a relation to electricity, by virtue of which that agent produces upon it the phenomena of contraction. Upon either supposition there is something inherent in the muscles which makes them susceptible of contraction, and this property we may with propriety call *contractility*. Were there not some property or peculiarity of structure belonging to muscle, and which establishes this relation between it and the electric agent, then the cellular tissue and the bones should also contract from the same cause.

Restricting contractility, then, to signify merely susceptibility of contraction, consisting in some property or peculiar constitution of the muscular fibre, and it appears to us that its

existence can not be denied. If we define it to be this particular property or constitution itself of the fibre, then the term is applied to something of which we have no idea, and like the characters in algebra, is merely the sign of an unknown quantity.

Fact, argument, and authority, then, are in favour of the opinion that the muscles are not dependant upon the nerves for their power of contraction, but only for the stimulus which *ordinarily* excites them to action. This being the case, it follows that the diseases of the muscles may be derived from two sources. 1st. There may exist a morbid condition of the nervous system, by which their stimulus becomes deficient, or excessive and irregular in its transmission. 2d. The morbid aberration may be in the contractile property of the muscle itself, by which it may become more or less sensible to the ordinary stimulus, or may become susceptible of impressions from other causes.

Our author in common, so far as we have known, with all who have treated of this disease, acknowledges no such principle, and yet, if it be employed in pathology at all, there is certainly no disease which will with more propriety admit of it than tetanus. By the author's own statement, it appears that the brain and spinal marrow are no more affected than may be accounted for by the general disturbance of the system, and for that reason he infers that the source of the disease must be in the sympathetic system, which ordinarily influences the voluntary muscles scarcely at all. Indeed, nearly all the remarkable phenomena of this disease appear to be concentrated in the muscular system. Even after death, while scarcely any morbid derangement can be discovered in other organs, the muscles remain rigid and the body inflexible. The little influence which neurotic remedies exert upon this disease is a circumstance favouring our position. Narcotics have perhaps been more employed than any other agents on account of the supposed seat of the disease, but they have generally appeared to have but little influence, and

even that may be accounted for by the influence which they may be presumed to have on the muscles through the nerves.

The general and rapid diffusion of the disease throughout the muscular system is a circumstance which may favour the belief that the morbific cause emanates from the nervous centres, but it is to be observed that the nerves, in addition to their office of conveying their peculiar influence from the sensorium, undoubtedly serve as the internuncii between the various parts of the muscular system, by which a correspondence and harmony of action is produced, as is done between the internal organs through the branches of the sympathetic.*

Our author has certainly suggested nothing new in relation to the treatment of this formidable disease. Bleeding has been often employed, in almost every degree, with little advantage. Narcotics also, as mentioned above, have not been neglected. Emetics and cathartics have been resorted to, and we believe, when employed to produce a powerful impression on the digestive organs, they have accomplished more than any other class of remedies. Tonics and diffusible stimuli have been strongly recommended by some and rejected by others. The effects of the warm bath have generally proved in some degree beneficial. The cold bath has also been employed with apparent benefit.

Whatever treatment may eventually be found successful, we are sanguine that it will be one which is employed with a bold hand and which is calculated to make a powerful impression upon the system. The victim of this disease can only be torn by violence from its iron grasp.

From the pathological principles which we have endavoured to substantiate, we would propose, as a general object, to effect, by some energetic means, a concentration of the powers

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* We do not deny that the exciting cause may operate through the nerves. We only claim that the proximate cause exists exclusively in the muscles. The division of the nerves would probably not relieve the spasm when it is once excited.

of life in some other set of organs. With this view we would first employ an emetic, and next, particularly as the bowels are usually torpid, some drastic purge, as gamboge, scammony or croton oil. Next we would recommend the use of some remedy which may excite the vascular system with the least possible influence upon the nervous, and which would at the same time solicit the vital forces to some of the internal organs. For this purpose we would use liberally the tinct. lyttæ to effect speedily the urinary organs. The application of the actual cautery along the spine we would also recommend, for although this be not the source of the disease, still it may be influenced through the medium of the nerves. The warm bath should not be neglected, neither would we discard narcotics. N. R. S.

ART. II.—*Addenda to Miner on Spotted Fever.*—August 29th, 1823.

"*Absistamus: nam lux inimica propinquat.*"

HAVING accompanied the author of the above pamphlet thus far in his career of authorship, and having heretofore found much to commend as well as to condemn, we would fain continue the pleasing exercise of the former duty; or if this zealous writer will so abruptly deviate from us, and even from himself, as that we can find occasion only for censure, we would, if possible, altogether withhold our opinions. But unfortunately it is our province, not only to exhibit in strong relief, the excellencies of an author, but it is also our imperious duty to warn the public against his errors. In the present instance there are other reasons which compel us to remark. Hitherto we have spoken of our author's writings in terms of qualified approbation. We have expressed our opinion in accordance with his general pathological remarks on spotted fever. Of his general indications of treatment we have also approved. We hope that our readers will have

already observed, however, that our expressions of this kind have been predicated upon the correctness of our author's personal observation, and on the supposition that the epidemic of which he treats is indeed spotted fever, or a disease characterised by similar symptoms of depression of the vital powers. In the general sketch which our author has heretofore given, and in the assertions made by him of the character of the disease, we could not doubt, without calling in question his veracity, the identity of the disease which he describes with this formidable epidemic. In the Addenda, however, we are, by himself, furnished with data by which we may fairly discuss this important question. It will be recollected, however, that we pointed out certain inconsistencies in his former statement, which even then staggered our confidence in the impartiality of our author's perception of medical facts. Before proceeding further, however, we will permit him to plead his own cause, by quoting the cases which he has himself related in vindication of his principles and practice.

"*Case of Mrs. C——— B———, ætat. twenty-five.*—This patient, from some cause or other, was habitually costive, seldom having a discharge from the bowels oftener than once a week. Previous to her attack in the present instance, nothing had passed the bowels for five days, during which time, she was engaged in attendance upon a sick sister, whose case proved fatal. Most of this time, she sat up during the night. For the last two days, she was unquestionably in a state of predisposition, as she complained of loss of appetite, languor, indisposition for exertion, vertigo, and various other symptoms usually called hysterical, such as quick transition from laughing to crying, without adequate cause, etc.

"*July 6th.* 1825. About eight o'clock, A. M. while collecting vegetables in the garden, she was suddenly seized with extreme vertigo, complete blindness and deafness, with great distress and faintness referred to the epigastric region, upon which she immediately fell to the ground, in a state very near to perfect insensibility. On being carried into the house, the surface was observed to be very cold and pale, and there were the strongest marks of distress in the countenance.

The by-standers immediately applied tincture of camphor to the face, and smart friction was made, both with the hand and flannel, to the back and extremities. Under this treatment she soon recovered from her insensibility, but was at the same time seized with a most excruciating pain in the loins, and the lower part of the abdomen. This was so extreme, that she incessantly cried out for opium; and when some of the tincture was obtained, she would not wait for it to be dropped or measured, but insisted upon taking instantly, and unmixed, a quantity, which to the judgment of the attendants, must have been about half a fluid ounce. Her customary physician being absent, and some miles distant with other patients, she waited, without medical aid, about an hour after taking this dose, but as it made no sensible impression, and there was no relief, but indeed rather a gradual augmentation of the pain and distress, she requested that another practitioner should be called in. On his arrival, he directed an enema of nearly four fluid drams of tincture of opium, in a little warm water, together with the application of strong sinapisms to the bowels, and horse-radish leaves dipped in hot water to the extremities. After waiting another hour without any perceptible mitigation of the pain, and the physician who had already visited her being engaged professionally elsewhere, another was now called. This gentleman supposed all the symptoms which had thus far occurred, were the mere result of a sudden *prolapsus uteri*, and under this notion, he very strongly disapproved of the measures that had been taken, and on the score of the opium particularly, he excited considerable agitation and anxiety, both of the patient, and the bystanders. According to his views (as subsequently stated) the introduction of a pessary was to be the most important means of relief. Notwithstanding this opinion, however, he prescribed twelve drops of tincture of opium, every four hours, and twenty of spirit of ammonia every two hours, and departed. In another hour, the customary family physician arrived. At this time, according to the statements of the patient and attendants, there was still very little mitigation of the pain. The pulse was quick, and gaseous, (or in other words, soft and weak, with considerable apparent fullness,) and as infrequent as fifty-five in a minute. The temperature, though declared not to be near so low as it had been, still fell considerably short of the natural standard. The countenance was motley, being principally very pale, but with a few livid patches; the lips were livid; the tongue was much contracted and pointed, and its surface was shrivelled, and somewhat red-

der than natural. There was no thirst, though the patient lay with the mouth open. The respiration was hurried and laborious, and resembled that of a person who had just been making violent bodily exertion. Another enema, of half a fluid ounce of tincture of opium in a little warm water, was immediately administered, and three grains of opium, in conjunction with half a fluid ounce of spirit, and the same quantity of hot water, were taken into the stomach. As the external applications had produced no apparent effect, the mustard was removed from the abdomen, and a plaster of the cerate of lytta (of the P. U. S. A.) of at least forty-eight inches surface, was applied in its stead, and horse-radish leaves dipped in hot water, were renewedly applied to the whole extremities. Two grains of opium in pill were directed to be taken every two hours subsequently, and a hot mixture of one part spirit and two parts water, was advised *ad libitum*. About three o'clock, P. M. the patient had become much easier, but still was not entirely free from pain. The frequency of the pulse was a little increased, but still it was preternaturally slow, being about sixty in a minute; the temperature was restored to near the natural standard, and the whole surface was thickly sprinkled over with dark-coloured petecchiæ; the respiration was less laborious, but was still unnatural. There was no change in the tongue, but the patient had once vomited a small quantity of a transparent liquid, of a light grass-green colour. A slight degree of talkative delirium had taken place, and on inquiry, a considerable sense of faintness and distress was complained of, at the stomach. An epispastic was now applied to the forehead, and another large one between the shoulders; and in addition to what the patient was already taking internally, a mixture of ten minims of the liquor of the arsenite of potassa, and forty of the tincture of opium, was directed at every intermediate hour between the pills. The horse-radish leaves were again renewed to the extremities. The epispastic upon the abdomen had not yet produced any perceptible effect. During the evening, rubefacient effects began to be produced, by all the external applications; but with the exception of a considerable itching of the surface, there was no appreciable change of symptoms. The medication heretofore specified, was directed to be continued through the night.

"*July 7th.* This morning the patient was found free from pain, and perfectly rational. The pulse remained stationary, the surface was of a natural temperature, the petecchiæ of a florid colour, the tongue was dilated and flabby, with the

upper surface covered with a loose, slimy, dirty fur, and the edges and under surface livid; there was no thirst, and no irritability of the stomach, but still a great sense of distress and sinking was complained of in the epigastric region, which was uniformly aggravated by the slightest motion of the head.

"At this time, both sides of the head were shaved, and large epispastics were applied, and likewise another epispastic over the stomach. The same internal medication, that was directed the night previous, was continued, with the variation only of assigning a regular period for the administration of the spirit, of which a table-spoonful of a mixture one part spirit, and two parts of bread-water, was directed to be given every intermediate fifteen minutes, between the doses of the other medicines. During this day, and the succeeding night, the symptoms were kept pretty well at bay by this course, except that the patient vomited twice toward morning.

"*July 8th.* The patient tolerably comfortable. An epispastic was applied to each wrist. Both the day and the night passed in a pretty uniform state.

"*July 9th.* This morning, the symptoms still pretty much at a stand. The patient and her friends were now solicitous to have a discharge from the bowels, and though the abdomen was perfectly soft, and equally free, both from distension and uneasiness, yet the physician yielded to their solicitations, and permitted a laxative enema of decoction of tansey with common salt and molasses, to be employed. In about an hour this came away, but with only a slight discharge of fœcal matter. Epispastics were at this time applied to the ancles, but in other respects, the same medication as heretofore was continued.

"*July 10th.* This day the symptoms continued stationary, till the latter part of the night; and consequently, the medication was unchanged.

"*July 11th.* The fifth day of the disease. This morning the pulse was found much more frequent, being a little upwards of a hundred in a minute. The skin was again considerably cooler, and the fur of the tongue was loose. There was distressing singultus, and rejection of every liquid taken into the stomach.

"At this time, as this change was considered as a critical effort, all medicine was discontinued, except a pill consisting of two grains of opium, every two hours. Common tea, and simple chicken broth, very hot, were allowed often, in tea-spoonful doses, and the patient was enjoined to refrain as far as possible from all talking, and all motion, particularly of

the head, as moving this part had hitherto invariably occasioned faintness, sickness, and sinking at the stomach. Under this course, a considerable improvement of all the symptoms was found at seven o'clock, P. M. the pulse was less frequent and more full, the skin was warmer, the tongue was clear from fur, though quite red, the singultus and vomiting were gone, and the patient had had some quiet and refreshing sleep. The night passed tolerably well under the same course.

"*July* 12*th.* To all appearance, the patient was now pretty free from disease. The interval between the pills was protracted to three hours; and two fluid drams of the compound tincture of cinchona, were directed every two hours. Improvement continued through the day and night. Toward morning, there was some manifestation of returning appetite, and food sat well. Milk-porridge was allowed, with crackers soaked in tea, coffee, or brandy and water, and likewise a little cod-fish, soaked soft and picked fine.

"*July* 18*th.* Symptoms nearly stationary. A laxative enema, prepared as the previous one had been, was now employed. This soon operated twice pretty freely, and occasioned considerable faintness, and increased weakness. On this account, an extra pill of two grains of opium was given. The regular pills and tincture were continued as the day before. This day and night, on the whole, passed tolerably well.

"*July* 14*th.* The interval between the pills, was this day lengthened to four hours. The tincture was continued as usual. The patient was now able to take sufficient food, and to sit up in bed. Passed the whole twenty-four hours well.

"*July* 15*th.* Still improving. Took only four of the pills this day.

"*July* 16*th.* The patient now able to walk about her room. Discontinued both the opium and the compound tincture of cinchona, and in their place substituted a tea-spoonful of an aromatic tincture of gentian, in a glass of wine, every four hours. During convalescence, a great number of minute carbuncles made their appearance, which did not disappear entirely, under about a fortnight.*

"*Case of Miss L——— S———, ætat. sixteen.*—This patient was in a state of predisposition, for about a week, dur-

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* This patient had an attack of the same disease, in March, 1825, equally severe, which yielded to similar treatment.

ing which time she complained of languor, indisposition for exertion, headache, pain of the limbs, nausea, occasional vomiting, and diarrhœa. For the last twenty-four hours of this period, both the body and the limbs were thickly covered with distinct, but dark-purple petecchiæ. In the course of this time, the patient, of her own accord, had taken one cathartic of aloes with canella, which operated but moderately; and the day previous to the attack of her disease, another of sulphate of soda, which operated freely.

"*July 8th*, 1825. About one o'clock, P. M. after drinking freely of lemon-punch, which contained only a very small quantity of spirit, she was suddenly seized with great distress, and sense of faintness and sinking in the epigastrium, followed immediately by the most extreme pain in the lower part of the abdomen, much resembling that of parturition, but far more severe. Upon the occurrence of these symptoms, the whole body and limbs quickly became cold, and insensible to the most powerful irritants and rubefacients, the countenance pale, sunken, and ghastly, the lips livid, the tongue contracted and pointed, but without fur, the respiration interrupted, and resembling that of a person just beginning to recover from asphyxia. There was likewise violent delirium, and complete inability to swallow, but notwithstanding this general condition, the pulse was perfectly natural in all respects.

"On account of the inability to swallow, no internal remedy could be employed. An enema, consisting of half a fluid ounce of tincture of opium, diluted with a little hot brandy and water, was immediately administered; frictions were thoroughly and perseveringly employed; and after their discontinuance, the whole body and extremities were covered with horse-radish leaves, previously dipped in hot water.

"In the course of two or three hours, there was an obvious mitigation of all the symptoms, though no individual of them had disappeared. Deglutition, though difficult, was now no longer impossible, but yet the muscles concerned in this process, seemed to be partially paralytic, and when any effort was made to swallow, they acted irregularly and convulsively.

"Strong epispastics were now applied to the forehead, between the shoulders, and to the epigastric region; and the rubefacients to several parts of the body, were renewed. Forty minims of tincture of opium, and ten of the liquor of the arsenite of potassa, were directed every two hours, and at every intermediate hour, two fluid drams of officinal alcohol, in some hot liquid. In addition, ginger mixed with hot

spirit and water, and tincture of camphor diluted with hot water, were administered in considerable quantities, as they could be got down.

"Through the remainder of the day, there was a moderate, but gradual and regular alleviation of symptoms, till about ten o'clock, P. M. when a very irritable state of the stomach suddenly took place, accompanied with extreme epigastric sinking and distress, greatly hurried and panting respiration, very weak, soft, and small pulse, as frequent as a hundred and forty beats in a minute, together with a cool, moist, and flabby skin.

"The tincture of camphor, the officinal alcohol, and the spirit, were now omitted, and two grains of opium in pill, were given at every intermediate hour, between the regular doses of tincture of opium and liquor of the arsenite of potassa. Epispastics were applied in addition, to the ancles. Under this course, all vomiting soon ceased; there was quiet and refreshing sleep, consisting of short naps, from which the patient was easily roused, and the night passed comfortably.

"*July 9th.* This morning, there was a considerable mitigation of all the symptoms; the temperature was nearly as high as natural, the countenance was brighter, the epigastric distress and sinking were gone, the mind was tolerably steady, the pulse slower and fuller, the tongue covered with a light brown fur in the middle, and red at the edges, and the petecchiæ were beginning to disappear, (as often happens under such a course of treatment,) but there was such torpor of the bladder, as to occasion a total inability to void urine.

"For the last mentioned symptom, strong epispastics were applied to the inside of the thighs; but in other respects, the same medication that was employed the night before, was continued. The day passed comfortably, and with some further mitigation of all the symptoms; but as the torpor of the bladder still continued, an enema of decoction of tansey and ginger, to which was added common salt, was administered in the evening. This came away during the night, but without any fœcal discharge of any consequence from the bowels, though with a free evacuation of urine.

"*July 10th.* This morning there was no material change in the symptoms. The patient, however, was full as well as the day before. The sleep had been quiet and refreshing, and the patient was easily roused by the slightest means. One or two additional epispastics were now applied, but no change was made in the internal remedies. As during this day and night, the symptoms continued at bay, no change

was made in the medication, except the addition of two small epispastics to the arms.

"*July* 11*th.* This day and night, no change of any consequence in the symptoms, and of course the same medication continued.

"*July* 12*th.* Till the evening of this day, there was no material change either in the symptoms of the case, or the medication. During the evening, it being the early part of the fifth day of the disease, great irritability of the stomach suddenly took place, and all liquid medicines were rejected. The surface immediately became considerably cooler, the pulse as frequent as a hundred and twenty in a minute, the respiration hurried, and a profuse sweat took place. At this time, two grains of opium in pill, were directed every hour, and every thing else was interdicted, till the stomach should become composed, which happened in the course of the night. After this, the pill was given only every two hours, and at the intermediate hour, a small quantity of spirit and water was allowed, and a little common tea made very strong.

"*July* 13*th.* This morning, the patient was much better, the skin was nearly of the natural temperature and softness, the pulse was less frequent, the stomach perfectly settled, and the tongue fast losing its fur. At this time, the interval between the pills was lengthened to three hours, and half way between, two fluid drams of compound tincture of cinchona, were directed. During this day and night, there was considerable improvement.

"*July* 14*th.* The patient still improving. The pills were now given only every four hours, and the compound tincture of cinchona, half way between. Food was taken with considerable relish, and in considerable quantity.

"*July* 15*th.* This day took only four pills, and then discontinued them entirely. No further medication, except a little of the tincture necessary. Convalescence was subsequently rapid.

"*Case of Mr. R——— F———, ætat. twenty-three.*— This patient for several days previous to the attack of his disease, had complained of languor and weakness, and had been pretty much destitute of appetite. During this period of predisposition, he took two cathartics, one of which was sulphate of soda. This operated freely, only the day before he was seized. The night immediately previous to his attack, he spent in watching with a patient, sick of the prevailing epidemic.

"*July* 10*th*, 1825. While walking in the street, between twelve and one o'clock, P. M. he suddenly observed to a companion, that he felt as if intoxicated, and almost instantly fell to the ground. He was immediately carried into a house, and medical aid was called. On the arrival of the physicians, which was about one o'clock, P. M. the patient was still in a state of entire insensibility; and his condition, to the eye of a bystander, resembled a person labouring under a serious apoplexy; or more exactly, one recovering from a state of asphyxia from drowning. The surface was pale and cold, and covered with a clammy sweat; the eyes were fixed; respiration was slow and interrupted, and seemed as if carried on entirely by mere voluntary exertion; pulsation at the wrist was barely perceptible, and there was total inability to swallow.

"After wiping, and thoroughly rubbing the skin, epispastics were immediately applied to the forehead, sides of the head, and between the shoulders; and nearly the whole of the body and extremities, were covered with sinapisms. As no tincture of opium was at hand, an enema, consisting of a fluid ounce of oil of turpentine, mixed with the same quantity of oil of olives, was immediately administered.

"In about two hours, the skin was raised nearly to its natural temperature and softness, and the pulse acquired so much force, that its beats were easily ascertained to be about fifty in a minute. There was now no stupor, but considerable delirium had taken place. The eyes had a fixed and vacant stare, but when the patient was spoken to, he immediately raised himself with a frightful expression of countenance, somewhat resembling that of a rabid person. There was, at the same time, considerable deafness.

"A mixture of thirty minims of tincture of opium, thirty of strong tincture of lytta, and three of the liquor of the arsenite of potassa, was now directed to be given every two hours, and at the intermediate hours, a pill consisting of a grain and a-half of opium, with two grains of calomel. Spirit and water were prescribed for drink. During most of the remainder of the day, and the subsequent night, there was violent delirium, but,

"*July* 11*th*, at eight o'clock, A. M. the patient was found free from this symptom, though in its stead, there was a great sense of distress and sinking in the epigastrium. The pulse was now very soft, weak, and frequent; the skin cool, and both the body and extremities covered with petecchiæ, of rather a florid colour. The countenance was at the same time

pale and sunken, the tongue was pale, and of a bloodless appearance, and coated with a thick but slimy and dirty fur.

"At this time, an epispastic was applied to each wrist, an occasional use of camphor, and a free use of spirit was directed, and the opium, both in substance and tincture, with the liquor of the arsenite of potassa, as heretofore specified, was continued. The tincture of lytta, and the calomel, were, however, abstracted, the former on account of a copious and exhausting diuresis, which it had evidently produced; and the latter, because it was now deemed injudicious, and believed never to have been indicated. Neither of these articles appears to have been proper in this case. At eight o'clock, P. M. the patient was again delirious, and much inclined to coma, but the epigastric sinking and distress, seemed to be somewhat less. The pulse was very weak and soft, and the tongue as last specified.

"The spirit, and the opium in substance, were continued as heretofore, but the dose of the tincture of opium was increased to forty minims, and that of the liquor of the arsenite of potassa, to ten minims; and an epispastic was applied to each ancle.

"*July 12th.* This morning, no material change perceived in the symptoms. Additional, but small epispastics, were applied to the legs and arms, but in other respects, the same medication was continued. In the course of the day, considerable strangury took place.

"*July 13th.* This morning, the symptoms still stationary. New epispastics were applied to the inside of the thighs and arms, but the same medication, in other respects, was continued. At evening, there was pain in the bowels, which was soon followed by an urgent diarrhœa, ten or twelve discharges happening in the course of the night, though four extra pills of opium, of two grains each, and three enemata of four grains of opium in powder, were given during this time. This quantity of opium kept the patient from sinking under these profuse evacuations. Judging from the effects of calomel in other cases, it is believed that the diarrhœa was to be ascribed to that article, which, it will be recollected, was used at the commencement of this case. Through this night, the patient was generally wakeful, but when he did sleep, he sweat profusely; in consequence of which, the skin became considerably cooler than it was before, though the tongue became clean, and the delirium disappeared.

"*July 14th.* This morning, the patient was found in an extremely languid and weak state, but at the same time free

from most of the uneasiness, which had hitherto attended his disease. The diarrhœa had abated, but was not entirely gone. The same internal medicines were directed that had been regularly employed the day previous, and an enema of four grains of opium in powder, was directed after every discharge from the bowels that might take place. Two only were needed before evening. During this day, the skin became nearly of the natural warmth, the tongue became clean, but was very red; and the pulse was about eighty, in a minute. The night was passed comfortably, under the same course. No opiate enema was needed.

"*July* 15*th.* This morning there was considerable improvement in the general condition of the patient, and he was considered so free from disease, that the tincture of opium, and the liquor of the arsenite of potassa, were omitted, and half a fluid ounce of the compound tincture of cinchona, was directed in their stead. The same medication in other respects was continued, and the day and night passed well.

"*July* 16*th.* The patient still improving. The intervals between the doses of opium, were now protracted to three hours, and the same was done with respect to the doses of the compound tincture of cinchona.

"*July* 17*th.* Still improving. The same medicines continued, but at intervals of four hours.

"*July* 18*th.* Still better. The same medication, but at intervals of six hours.

"*July* 19*th.* Still better. All the medicines hitherto employed, were now abstracted, and the patient was put upon a mixture of one dram of cinchona in powder, with a glass of wine, four times a-day. The petecchiæ are not yet entirely gone, though they are now fast disappearing. The patient now has a good appetite, walks out, and is rapidly recovering his wonted strength. Discharged."

"*Case of Miss A—— C——, ætat. thirty.*—This patient had for a long time laboured under Ayer's Dyspeptic or Hepatic Marasmus; and for several days previous to the attack of her disease, had been more or less in attendance, both night and day, upon sick friends, beside labouring unusually hard the day immediately preceding, in washing. On that day, she took (without advice) a common cathartic dose of the tincture of aloes and myrrh, but it produced no operation upon the bowels.

"*July* 15*th*, 1825. In the morning, she was suddenly attacked with pain in the *heel*, which by paroxysms, was ex-

tremely violent. During the remission of this pain, she had hysterical delirium, with incessant loquacity, and alternate laughing and crying, without adequate cause. There was no medication at all till five o'clock, P. M. when her physician arrived. At this time, her cheeks were of a deep livid colour, while the rest of her face was preternaturally pale; the skin was preternaturally cool, and rather dry; the tongue was covered with a slight thin fur, and was contracted and pointed; the respiration was like that of a person who had been making violent bodily exertion; the pulse was weak and soft, and about fifty beats in a minute. Strong epispastics were immediately applied to the forehead, between the shoulders, and on each wrist, horse-radish leaves dipped in hot water, were applied to the feet and legs, and forty minims of tincture of opium, five of the liquor of the arsenite of potassa, and five of strong spirit of pepper-mint, were given every two hours. Hot spirit and water, and hot tincture of camphor and water, were given *ad libitum*. In this way, about half a pint of spirit was taken in the course of twenty-four hours. Under this medication, the patient became much more comfortable, and continued so for the remainder of the day and night. The sleep was moderate and easy, the temperature of the skin rose nearly to its natural warmth; the pulse, though still weak, was as frequent as seventy-five in a minute; all pain was gone, the delirium was much less, the tongue remained as the day before, but there was so great torpor of the bladder, that the patient was entirely unable to void urine by voluntary effort.

"*July* 16*th*. This morning, the symptoms were found much as they had been during the evening and night. Epispastics were applied to the inside of the thighs, for the relief of the torpor of the bladder; but in other respects, the same medication was continued. During the day, the symptoms continued pretty much at bay, and before evening, the torpor of the bladder was relieved. During the night, there was considerable restlessness, and more delirium.

"*July* 17*th*. This morning, the tongue was dark red, much dilated and flabby, and destitute of fur, the skin was considerably cooler, there was a profuse and exhausting sweat, the pulse was soft and weak, and about a hundred and twenty in a minute. Epispastics were now applied to each ancle, and two fluid drams of officinal alcohol, diluted with a little hot water, were directed to be taken every hour, in addition to the previous course. Through the day, the symptoms remained nearly stationary. In the evening, there was considerable epigastric sinking. At this time, an extra dose of two grains of opium in pill, was administered. During the

night, there was but little epigastric sinking. The other symptoms remained stationary.

"*July* 18*th.* This morning, no new symptoms, and the previous ones were much at bay. The same medication was continued. Till twelve o'clock, M. the patient remained comfortable, and without change of symptoms. At this time, there was a severe paroxysm of epigastric sinking, but without any material change in the condition of the pulse, tongue, or skin. A large epispastic was now applied to the epigastrium, and an enema of three fluid drams of tincture of opium mixed with a little hot water, was administered. The same medication, in other respects, was continued. The afternoon passed more comfortably. About nine o'clock, P. M. there was an increase of the delirium, with incessant loquacity, which lasted about an hour and a-half. Between ten and eleven o'clock, P. M. she suddenly sunk into a deep coma, which was mistaken by the attendants for fainting. At this time, the skin was cold, and drenched with sweat, the lips were purple, the respiration was interrupted, and resembled that which is entirely voluntary; there was effusion into the bronchiæ, throbbing or palpitation of the carotids, and other large arteries, but the pulse, though seemingly full on a superficial examination, was extremely weak and soft. An immediate application of mustard was made to the thorax, frictions were vigorously employed, and horse-radish leaves dipped in hot water, were applied to the extremities, but all with little or no effect. Life continued till about one o'clock, A. M. Just before death, there were two or three slight convulsions, which lasted a few seconds only."*

"*Case of Mark Mortimer Leavenworth, ætat. twenty-five.*—This patient was naturally a person of slender constitution and rather feeble health. Having an early taste for literature and science, he was originally designed for an academical education, which, however, he was prevented from obtaining by a disease of the eyes, a semi-paralysis of the optic nerve, which was brought on by close application to study. He had been engaged for about three years in the

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* In each of the preceding cases, much injury was invariably produced by moving or raising the head, while the patient was in the lowest state. Epigastric sinking was the certain consequence. In general, the head was not shaved and blistered sufficiently early. As this process is attended with trouble, it is usually deferred so long as not to produce its full effect. In the worst cases, all the most efficient means should be employed, with the least possible delay.

study of medicine, and was only waiting for the expiration of the legal time, in order to be admitted to the degree of M. D. Immediately previous to the time of his sickness he was the pupil of Samuel B. Woodward, M. D. of Wethersfield, Connecticut, in whose practice he had witnessed several cases of the disease with which he was soon to be seized.

"On the eighth of July, he made a visit to Middletown, Connecticut, and was invited to remain a short time, as an assistant to one of the physicians of that place, who had more cases of the epidemic under his care, than he could well do justice to alone.

"*Tuesday, July 12th*, 1825. After about three days attendance upon the sick in this place, he complained about nine o'clock, A. M. of pain in the bowels, which was soon followed by a free liquid discharge, that produced great languor and sense of weakness. Two fluid drams of camphorated tincture of opium, obviated these symptoms, and prevented any further evacuations from the alvine canal. About twelve o'clock M. while visiting a patient, he was suddenly seized with great vertigo, accompanied with faintness or sinking at the stomach, which were speedily relieved by three or four fluid drams of compound tincture of chinchona. Upon this, he immediately rode home, and soon after ate with much relish, a full dinner. The vertigo, and faintness or sinking at the stomach, occurred at intervals through the afternoon, and confined him to the house, but not to his bed. The paroxysms, however, were readily relieved by a little brandy and water. During the whole of this time, the pulse, tongue, countenance, and skin, exhibited no appreciable deviation from their customary healthy state. Towards evening he walked out a few rods, but was seized with faintness, which caused him to return and take to his bed, from which it is believed, he never arose without assistance. In the evening he took a cup of tea, a little brandy and water, and a single grain of opium, which greatly relieved the vertigo, and epigastric faintness or sinking, the only symptoms of which, at this time, he complained. During the night, he took moderately of brandy and water, or of compound tincture of cinchona, as often as these symptoms occurred, and invariably, with material relief. There was but little sleep, and that much interrupted.

"*Wednesday, July 13th.* In the course of this morning, there was double vision, the vertigo and epigastric faintness or sinking became much worse, and there was total inability to raise, or even move the head, without great aggravation of

these symptoms. The pulse was still natural, as respects frequency and force, but had become quick; the skin was also natural, both as respects temperature and moisture; but the tongue had become flabby and pale, and was covered with a thin, light coloured fur; and the respiration was like that of a person who had just been making considerable bodily exertion.

"It was now judged necessary to enter upon a regular course of medication, and the patient was accordingly put upon one grain of opium every two hours, with three fluid drams of compound tincture of cinchona, and about the same quantity of brandy suitably diluted, every hour. A little wine was occasionally taken at the pleasure of the patient.

"During this day, the symptoms were much less perfectly controlled, than they had been the night previous. Towards evening, and through the night, there was considerable disposition to vomit, with occasional retching, for which about four extra pills of opium, each consisting of two grains, were taken at irregular intervals, and uniformly with great relief. During the night there was but little sleep, and that imperfect and unrefreshing.

"*Thursday, July 14th.* Double vision, vertigo, and epigastric faintness still continue, but with some abatement, especially of the last. The pulse, skin, and tongue, are much as the day before, but the respiration is nearly natural. During the regular morning aggravation of symptoms, epispastics were applied to the forehead, and the sides of the head. The same quantities of opium and alcohol, that were used the day before, were continued. In the afternoon, without any appreciable change in the external symptoms, the patient felt more comfortable, but on account of a slight uneasiness in the bowels, a casual medical visitor advised a laxative enema. Instead of this, one of a dram or two of laudanum was given, which instantly relieved. Although there was neither fulness nor hardness of the abdomen, even in the slightest degree, but on the contrary, a perfectly soft, and rather lank state, yet some hours afterwards, this advice, at the wish of the patient, was complied with, and a decoction of tansey and ginger, to which was added a little common salt and lard, was administered. About this time, from the suggestion of a counsellor of much experience, and good judgment in such cases, an aromatic infusion of gentian, was substituted for water, for the purpose of diluting the compound tincture of cinchona, and instead of the brandy and water, a table-spoonful of a mixture of equal parts, brandy, lime-water, and boiled milk, was employed. As after some hours, the same uneasi-

ness in the bowels returning, and no evacuation having taken place, another enema, prepared in the same manner as the first, but with the substitution of a fluid once of castor oil for the lard, was administered. About half an hour from this time, there were two moderate evacuations, which were immediately followed by a considerable increase of vertigo, and epigastric faintness, troublesome palpitation of the heart, aorta-descendens, and carotids, great restlessness, and slight delirium, together with a difficulty of retaining any thing upon the stomach. On the occurrence of these symptoms, an enema of two fluid drams of tincture of opium diluted with a little tepid water, was immediately administered, an epispastic was applied to the region of the stomach, and the regular dose of opium was increased from one grain, to a grain and a-half. On account of the irritability of the stomach, it was necessary to omit the compound tincture of cinchona, and the aromatic bitter infusion, and to get down the mixture of brandy, lime-water, and boiled milk, as the stomach would receive it, but without any regularity. During the night, several extra pills of opium, of two grains each, were given at irregular intervals, as the urgency of symptoms required. Under this course, there was considerable abatement of the immediate urgency of the symptoms, and upon the whole the patient slept considerably more than for any night previous, though the naps were short, and the patient was easily roused.

"*Friday, July 15th.* This morning the patient was better than the evening preceding, but not so well as the morning previous. The vertigo was still considerable, and there was total inability to move the head, without great augmentation of it. There were, however, only occasional paroxysms of epigastric faintness, and these very moderate. Troublesome palpitation of the heart, aorta-descendens, and carotids, occurred occasionally, always accompanied with considerable restlessness. The skin was cool, and very sweaty, and the pulse was soft and feeble, and as respects frequency, it fluctuated between eighty and one hundred and ten.

"A grain and a-half of opium was now given, every two hours; and every fifteen minutes, a table-spoonful of the mixture of brandy, lime-water, and boiled-milk. Nourishment hitherto, though taken with considerable freedom, had been given rather irregularly. Chicken broth had been tried, but milk-porridge was preferred. A table-spoonful of the latter was now directed to be invariably taken after each dose of the brandy mixture, and frequently a table-spoonful of coffee, was allowed in addition. During this day, in consequence of

special exacerbations of the vertigo, palpitation, and restlessness, three enemata, each consisting of two fluid drams of tincture of opium, and two extra pills of opium of two grains each, were necessarily administered, each of which produced the most obvious relief of the symptoms for which they were employed, for the space of two hours. This day there was so great torpor of the bladder, as to prevent a voluntary discharge of urine, but when the catheter was employed, this excretion was found to be natural, both in appearance and quantity. As extra doses of opium were so often necessary, in order to meet urgent symptoms, it was this evening judged expedient to increase the regular dose (which was given every two hours,) to two grains; and on account of a disrelish for the taste of brandy, old spirit was substituted, and a mixture was made, of two parts spirit, one part lime-water, and one part boiled-milk, which was likewise given in doses of a table-spoonful, and followed by the same quantity of milk-porridge, and occasionally the same of coffee. The night passed much more comfortably than any previous one, since the commencement of the disease. The sleep during the whole twenty-four hours, was less than natural, but more quiet and refreshing than it had ever been before. It was still necessary, however, to keep the head low, and motionless. During the day and night of the fifteenth, the patient vomited but twice.

"*Saturday, July 16th.* This morning, the symptoms were more at bay, and the patient more comfortable, than any morning since the attack. During the customary apyrexial aggravation of the forenoon, beside restlessness and palpitation, there was some delirium. An enema of two fluid drams of tincture of opium, was immediately administered, the whole top of the head was shaved, and a strong epispastic was applied. The enema not proving sufficient, two extra pills of opium, of two grains each, were given, before the restlessness and palpitation were obviated. When the epispastic began to produce its effect upon the surface, the delirium speedily disappeared. In the afternoon, there was a very obvious mitigation of all the symptoms, and the patient was still more comfortable, than in the morning. For the first time since the attack, the patient was now carefully lifted to another bed. This produced a considerable aggravation of the vertigo, and a recurrence of the epigastric distress and palpitation, for which there was given with speedy relief, an extra pill of two grains of opium, and an enema of two fluid drams of the tincture.

"*Sunday, July 17th.* This morning, the symptoms in general were alleviated still further, than on the morning previous, though there was still inability to move the head without troublesome vertigo. The regular forenoon deterioration required this day, for its relief, two extra pills of opium, of two grains each. At this time, it was judged expedient to enter upon the use of the liquor of the arsenite of potassa, as a supportive aud invigorating agent, and accordingly two minims were given with every regular dose of opium. Otherwise the course, both as respects medicine and nourishment, which had been pursued for the two days previous, was continued. The night passed as comfortably as any one since the attack, if not more so.

"*Monday, July 18th.* This morning, as for three mornings preceding, there was a mitigation of the symptoms, in comparison with most of the day previous. The forenoon aggravation, however, required two extra pills of opium, of two grains each. During the day, some uneasiness in the bowels was complained of. On examination, the abdomen was found to be still free from hardness, fullness or tenderness, but on the contrary, it was actually soft and lank. An enema of two fluid drams of opium, entirely obviated all complaint. This day passed comfortably, as there was less vertigo, palpitation, and restlessness, than usual. Toward evening, the patient was again removed to another bed, which, as usual, occasioned a recurrence of troublesome symptoms, viz. vertigo, palpitation and restlessness, and rendered another enema of two fluid drams of tincture of opium, and an extra pill of two grains, necessary, before the patient could be rendered as comfortable as before. In the course of the afternoon vomiting happened once, and that not long after a dose of the liquor of the arsenite of potassa. As the patient confidently ascribed this effect to that medicine, though probably without reason, it was judged expedient to discontinue it. The night passed comfortably, and without any extra doses of medicine. The regular course was continued unchanged.

"*Tuesday, July 19th.* This morning the patient was much as on the preceding. For the purpose of anticipating and preventing the usual forenoon aggravation, an enema of two fluid drams of tincture of opium, was given early, and with the desired effect. No extra pills were found necessary. About noon, the patient was visited for the first time during his sickness by his father, who lived at a distance. The agitation produced by this meeting, rendered another enema of

two fluid drams of tincture of opium necessary, in order to allay the increased vertigo, palpitation and restlessness The regular medication was continued unchanged. This night, for the first time, was bad attendance. The watcher slept, and of course was irregular, and repeatedly neglectful, in administering both food and medicine, and finally left the house where the patient was, before either the nurse or the family were up.

" *Wednesday, July 20th.* The patient was worse this morning, than on any morning since the fifteenth From that time to the present, the pulse had varied in frequency, from eighty to a hundred and twenty in a minute, and had been soft and weak. The skin had been somewhat cooler than natural, and rather more sweaty than desirable. The quantity of sleep for the twenty-four hours together, on the whole, had been less than in health, but it consisted of short, quiet, and apparently refreshing naps, from which the patient was easily roused. If suffered, however, to continue more than about ten minutes, they became laborious, and seemed to produce fatigue and exhaustion. During this period, the tongue had gradually assumed a thin, but close, sordid, and brown fur, which, however, was uniformly moist. No special thirst had been complained of. The aggravation of symptoms at the present time, consisted in increased vertigo, palpitation, and restlessness; in reduced temperature of the skin; and in an increase of the frequency of the pulse, to about a hundred and thirty in a minute. An extra pill of three grains of opium, and an enema of three fluid drams of the tincture, were given in the course of the forenoon, with the effect of restoring the patient, very nearly, if not entirely, to the situation in which he was, the day previous. During the day, it was judged expedient to take some measures towards moving the bowels, not because there were any further indications for this step from the condition of the bowels themselves, but merely from the length of time they had remained unmoved. In reference to this point, simple water was substituted for the lime-water in the spirit mixture, and about a scruple of the carbonate of magnesia was given at a dose, three times, at nearly equal intervals, during the day. As, however, the patient complained in each instance, after taking it, of considerable uneasiness in the stomach, and as there was an increase of the vertigo, languor, and restlessness, during the afternoon, contrary to the usual course of the disease, and as the tongue was gradually becoming more flabby, and as the edges from which

the fur was now beginning to be removed, were more pale than at any time previous, it was on the whole judged expedient, to relinquish the carbonate of magnesia, before it should produce any evacuation, and to add ten minims of strong spirit of pepper-mint, to each dose of the spirit mixture, and likewise to administer an enema of two fluid drams of tincture of opium. The latter part of the day, the patient was as comfortable as usual, till just at evening another aggravation of symptoms was produced, by changing the shirt. This rendered another extra pill, of two grains of opium, necessary, and another enema of two fluid drams of the tincture. About eleven o'clock, P. M. the patient was consigned to the care of the attendant for the night, in as favourable a condition as had been usual, at that time, for several days. About one o'clock A. M. a physician, who slept in an adjoining chamber, was called, on account of a slight discharge of blood from the urethra, in consequence of the introduction of the catheter, which had still continued to be necessary, though it had always been performed by the patient himself. This symptom being explained to the satisfaction of the attendant, the general condition of the patient was examined. Unexpectedly, the pulse was now found to be very small, weak, and soft, and as frequent as a hundred and sixty in a minute, the beat being peculiarly short and quick. The temperature was soon considerably reduced, the countenance became sunken, there was increased vertigo, and a confusion of mind, almost amounting to delirium. An extra pill of opium, of two grains, was immediately given; and the regular dose was increased to three grains. The spirit and nourishment, were continued as heretofore.

"*Thursday, July 21st.* This morning, the patient was in a very low state; but in comparison with the latter part of the night, somewhat improved. Two grains of opium were now given every two hours; and at every intermediate hour, forty minims of the tincture, in conjunction with five minims of spirit of cinnamon. Two additional epispastics, were applied to the sides of the head. Through the day, the symptoms remained nearly stationary. At evening, the patient in a very low state. During the night, he vomited several times; after which, for a few moments, there would be a furious delirium. During the whole time, there was great restlessness and jactitation. Toward morning, there was a kind of epileptic tremor; after which, about sunrise,

"*Friday, 22d July*, dissolution took place."

The above cases are, in the author's pamphlet, preceded by a few miscellaneous remarks, which we have not thought it necessary to quote entire. The following, however, attracted our attention. "Among children more especially, a spurious reaction of only a few hours, with stinging heat, has occasionally appeared, but generally the coldness and languor soon returned."

"Several *torpid* insidious cases have been broken up by *acrid* emetics." "Several of the insidious cases of the present year have been usually protracted, and have assumed somewhat the appearance of chronic complaints, the paroxysms of *sinking* occurring in a severe degree only once in seven days, though there was generally a moderate and obvious *subsidentia* every morning, or rather every forenoon." "In no disease is it so necessary to meet every symptom instantly; and the paroxysms of sinking, when periodical, should *always* be anticipated by such means as will tend to prevent them." "More than half the cases are so mild as to require but very slight medication, provided all injurious measures are avoided."

"Petecchiæ, eruptions, ecchymoses, general effusion of the capillaries, coma, delirium, palpitation, interrupted respiration, numbness, and insusceptibility to the action of ordinary rubefacients, and epispastics and sinking after evacuations, are much more common than in any other febrile disease. By attending to these symptoms, it may be more easily distinguished than any other continued fever." "There is always some prominent symptom by which it may be determined, when the general effection of the system is typhus syncopalis."

It will be recollected by our readers that in his pamphlet on syncopalis, our author reported between three and four hundred cases of this epidemic, as having occurred in one season, in the city of Middletown, containing about four thousand inhabitants, and in the country adjacent. Without any impeachment of his candour, we may fairly presume the

cases which he has collated in the foregoing pages, to be those which presented in the most unequivocal manner the distinguishing traits of this appaling disease, and which should demonstrate triumphantly the success of his boasted *medication.* Indeed it is with an air of confidence in these particulars that they are given to the public, since he has deemed it altogether unnecessary to back them with note or comment.

From near four hundred cases, even if we suppose our author to have misnamed nine cases in ten, it would have been an easy matter to have selected six, provided there was a peculiar epidemic prevailing, which should exhibit clearly, to every one, the characteristic symptoms of the disease; and particularly since our author himself observes that "it may be more easily distinguished than any other continued fever."

Let us, then, carefully scrutinize the black vanguard of this fearful pestilence, "*et crimine ab uno disece omnes.*"

We would first observe, however, that we have some objections to the manner in which the cases are recorded. We will not *assert* that they were made up from memory, but such is certainly the appearance which they present. *Ex tempore* minutes do not appear to have been taken, for in the relation the author always makes use of the past time, as for instance, "about three o'clock the patient *had* become much easier." "July seventh. This morning the patient was found free from pain, &c." "July twelfth. To all appearance the patient *was* pretty free from disease, &c."

Now it is altogether impossible that the most tenacious memory, while exercised with such a variety and multiplicity of cases, should be able, even after the lapse of a few hours, to refer to each individual case its own peculiar phenomena. The author's attention would be more strongly attracted, and his memory more deeply impressed, by those circumstances which were most coincident with his own anticipations, and preconceived opinions. These, even by one who aimed at impartial truth, would, in cases transcribed from memory, be exhibited in strongest relief. That this is true in relation to

the present cases we may fairly conclude; for, whatever may be the fact, they are *ostensibly* made up in this way, and can pass for no more than the current value which the author has himself stamped upon them. This circumstance, then, certainly weakens the testimony which they yield in relation to the disease in question.

Let us now proceed to examine the first of the cases which we have quoted, viz. that of Mrs. C——— B———.

This case is described as having been ushered in by symptoms "usually called hysterical," and really we can not perceive by what feature the sagacity of our author so promptly distinguished it from that protean disease. The previous fatigue, the costive state of the bowels, were certainly adequate causes, and in the *onset* of the disease there did not occur a single symptom which is not often exhibited by hysteria. We very well know that as fevers are ushered in by chills, so the most violent cases of hysteria attack by a kind of nervous prostration or paroxysm of sinking. We have ourselves seen cases in which the powers of life were apparently almost extinguished, even the pulse frequent, fluttering, and feeble, the extremities and indeed the whole body cold and insensible, the countenance cadaverous, and the oppression at the precordia extreme. The excruciating pain in the loins and the lower part of the abdomen, which supervened on the symptoms of *subsidentia* related by the author, certainly constitute the most uniform and characteristic symptom of hysteria; and indeed, whatever the author may have witnessed in the disease, there is certainly nothing recorded which can possibly distinguish the case from a strongly marked paroxysm of hysteria.

The case certainly exhibits nothing peculiar or characteristic of the disease which our author describes, *until the medication commences.* It happened very fortunately for the patient, as our author appears to think, that in the phrenzy of her distress she snatched from the hands of the attendants, and drank, "about half a fluid ounce of *tinct. opii.*" which, if we

mistake not, is equal to twelve grains of opium. On the arrival of the physician at the end of an hour, her distress not having abated, an equal quantity of the same was administered per anum. On the lapse of the second hour another physician was called in, and he also gave opium *gtts* xii. and directed the same to be repeated once in four hours. In another hour the family physician arrived.

Granting that two grains of opium by injection are equal to one by the mouth, and it is obvious that, at the end of this time, the patient was under the influence of not less than *eighteen grains of opium*, the greater part of which had been taken in the first hour. Now what effects should we expect to witness at the end of this time from the above enormous quantity of this potent remedy, in a case in which we will suppose the system not to be fortified against its peculiar influence, either by habit, idiosyncracy, or any obtunding influence of the disease itself? Who need be told that the poisonous effects of opium at the end of the third hour would be manifested in a pulse "quick and gaseous, (or in other words, soft and weak, with apparent fulness,) and as infrequent as fifty-five in a minute, temperature short of the natural standard; countenance motley, principally pale, but with a few livid patches; the lips livid; tongue much contracted and pointed, its surface shrivelled and somewhat redder than natural; respiration hurried and laborious, and resembling that of a person who had (has) been making violent bodily exertion." Our author certainly deserves the credit of having here given us one of the most concise, correct, and lively descriptions of the poisonous effects of opium which can be found in the writings of any author. Let us observe how it will compare with the statements of others, and we will, indiscriminately, take the first upon which we can lay our hand. "These are succeeded by diminution of the *force* and *frequency* of the pulse, by lassitude, impaired sensibility, and sleep."

"If a larger dose be given, the symptoms of diminished

action appear without any previous excitement, and are followed by delirium, stupor, deep and difficult breathing, convulsions, and death.*"

"When such a dose of opium is taken as would prove fatal if its effects were not obviated, the symptoms are insensibility, so that the patient can not be roused by any exertion; a pulse usually slow and full; deep and difficult breathing; and the countenance *generally* somewhat flushed,"† (or rather livid and mottled.)

We know very well too that a mottled appearance of the skin over the whole body often occurs, and as the effects of the agent are particularly determined to the capillary system, petecchiæ sometimes result, and even effusions of blood are known to be produced by this and other narcotics.

Now the question is, were the symptoms above related the phenomena of a peculiar disease, or were they the effects of the opium taken?

The reader has the facts before him, let him decide for himself, while we at the same time will express our strong conviction, so far as we can judge from the author's own statement, that, thus far, the secondary symptoms in this case were solely the effect of the enormous quantity of opium administered.

We would not be understood, however, to oppose the occasional use of this remedy, even in much larger doses, for we have already observed above, that the system may be, and often is, morbidly insensible to its impression. The case in question, however, does not appear to be of this character, for as we have observed, there is nothing which distinguishes it from hysteria, and in this disease, although opium, in liberal doses, and combined with antispasmodics, is an admirable remedy, yet certainly no one would think of employing more than four times the maximum dose, and that with scarcely any qualifying remedies.

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* Murray, p. 124. Vol. I. † Id. p. 130.

We should expect, of course, that it would induce, at once, indirect debility, in place of the direct prostration which it is intended to obviate. The striking coincidence of the train of symptoms recorded by the author, with those stated to be the effects of opium, are such a confirmation of the above position, that we can not but think the weight of evidence altogether in favour of the opinion expressed.

On the arrival of the family physician, another enema of *half a fluid ounce of tinct. opii.* was administered, and at the same time three grains of opium with half an ounce of spirit were given by the mouth. The amount we may safely estimate at eight grains by the mouth.

We have heard of the apparently absurd practice of employing opium, as a *remedy* for the relief of the *poisonous* effects of the same article; and indeed there is more philosophy in the principle than at first appears. When a patient is suffering under the secondary and depressing powers of opium, there is certainly indicated some powerful stimulus, which shall give a new impulse to the powers of life, and favour a re-action of the system. The first effects of opium, when not given in too great a quantity, we know to be stimulating, (and indeed our author seems not to be aware that it possesses any other.) If, then, a smaller quantity of opium than that first taken be exhibited at the proper juncture, the system will be roused by it to re-action; and if, when this effect has ceased, a still smaller quantity be exhibited, it will reach its natural standard of action, without the abrupt transition which would otherwise occur. This is certainly the only ground upon which the repetition of the article could be vindicated, and which accounts for its producing no more mischief than actually resulted. The practitioner, however, had no such views, and instead of gradually abstracting the remedy, (or the morbific cause as we would call it,) urged its continuance even in an increasing ratio; for, after having given two grains every two hours, till three o'clock, P. M., he added forty drops of the tincture, to be taken at each intermediate hour,

accompanied with *ten drops* of the *arsenite* of *potash.* Thus, if our arithmetic serves us correctly, and granting that the effects of opium continue for six hours, which will not be denied, the patient was constantly under the accumulated influence of twelve grains of opium in addition to spirit and water *ad libitum*, and the free use of *Fowler's solution.*

This is *medication* with a vengeance, and we are heartily glad that our author has invented an appropriate term for his peculiar practice.

Before the tincture was added to the previous *medication*, the surface of the body had become covered with petecchiæ, and the patient had vomited once. "A slight degree of talkative delirium, and on inquiry, a considerable sense of faintness and distress was complained of at the stomach."

Who will deny that these *might* have been the effects of opium? Would any one be at all surprised if they were to be exhibited by a person who, till then in perfect health, had within twelve hours, taken thirty grains.

By referring to the case the reader will perceive that on the following day, the patient is pronounced more comfortable, although "there was a great sense of *distress* and *sinking* complained of in the epigastric region, which was uniformly aggravated by the slightest motion of the head," invariable attendants on an over-dose of opium.

This day and night, nearly the same treatment was pursued, and the symptoms were kept pretty well at bay by this course, except that the patient *vomited twice* toward morning.

It was not till the ninth that an injection was employed as the first evacuant, except nature's necessity which, it seems, had emptied the stomach three or four times. A very slight discharge followed.

The same medication was continued till the fifth day of the disease, when things appear to have come to an extremity. By the author's own statement (and we applaud his candour,) almost every symptom is at this time evidently aggravated,

the pulse is small and frequent, (indicating that state of irritability which follows the depressing effects of opium,) and the skin is cold. There is distressing singultus and the rejection of every liquid taken into the stomach. What candid and impartial person can hesitate to pronounce these the effects of the enormous quantities of opium and arsenic with which the stomach had been deluged, and who will not perceive that from the very onset; the accumulation of disease has kept pace with the accumulation of. medicines, until at last nature kindly steps in and snatches the patient both from the physician and the disease? Although, upon our author's principle, the indications for the continuance and even the increase of the remedies, are at this juncture, by his own statement, stronger than at any previous period of the disease, yet he at once withholds nearly all medicines, and that, not from choice, but from necessity, for the stomach will no longer receive them.

Now if the opium, arsenic, and spirit were so necessary to sustain the *sinking* patient during the progress of the disease, they were surely doubly so at this period, and if the previous practice was correct, the abstraction of them, either from choice or necessity, ought to be followed by *paroxysms of sinking* and, indeed, an aggravation of every symptom; but if on the other hand, the symptoms were created by the medicines, the withholding of them should be gradually followed by restoration to health.

For our own parts we are astonished beyond measure, that the author should have presumed to adduce this case in behalf of his principles and practice. It appears to us, that an inference hostile to his opinions is drawn from it with mathematical precision. The author can not deny that the symptoms of disease did almost uniformly increase, until he was compelled to abandon the use of medication, and from that moment is dated the amendment of the patient.

On first reading the above case, we had our sympathies as much excited as did corporal Trim, in listening to a narra-

tive of sufferings in the Inquisition. While the *medication* was inflicting, "I had rather face a cannon," quoth Trim, "stamping," and when exhausted nature could endure no more and the wretch was finally released, "Then thank God, however," quoth Trim, "that they have not killed him."

Case II, appears in its onset to be one of a more equivocal character. It *may* have been a case of malignant fever, but there certainly is not sufficient evidence of the fact. As the symptoms are recorded, they are more characteristic of hysteria than of any thing else, until they are overwhelmed by the effects of opium. There was the same distress in the lower part of the abdomen, and the delirium may have been of the hysterical character. All the other symptoms may have been of the same nature. It is worthy of particular notice, that the pulse was perfectly natural; where then could have been the danger of using merely aromatic and diffusible stimulants, warmth, &c. until the disease should have been more evolved, and its character determined? Such a course would have answered our author's own indications better than the course which was pursued, viz. the administration of a stupifying dose of four fluid drams of laudanum by injection. The first effect of the medication was to mitigate the spasmodic affection, as we should have expected. There was still however a difficulty in swallowing, and when the attempt was made, the muscles acted convulsively and irregularly, which certainly is more characteristic of hysteria, than of a disease so paralysing in its influence as typhus syncopalis.

Forty drops of tincture of opium, and ten of the liquor of the arsenite of potassa, were now directed every two hours.

Under this treatment it is not surprising that the stomach became irritable, and the *epigastric sinking* to manifest itself, with hurried respiration, frequent pulse, &c. as soon as the first stupifying effects of the opium had gone off. The camphor, alcohol, and spirit, which had been given, were now omitted. The probability is that the remedies which had

been accumulating in the stomach for some time, and which from the torpidity of the organ, had for the last hours been not much changed, were disgorged. This accounts for the fact that the continuance of the opium did not repeat immediately the same effects. We know, too, that when the system once reacts upon opium, the repetition of it will not produce the same effects as at first. Were a person to take one grain each hour for three days, it is quite certain that if he survived the first effects, he would experience its influence less on the third day than on the first. Nature would accommodate herself to the exigencies of the case.

These occurred on the eighth day. On the twelfth, the quantity of opium having been doubled on the previous days, "great irritability of the stomach took place, and all liquid medicines were rejected. The surface immediately became considerably cooler, the pulse as frequent as a hundred and twenty in a minute, the respiration hurried, and a profuse sweat took place." Who does not know that these symptoms always attend vomiting produced by opium, tobacco, or any other narcotic?

Why did our author, when these symptoms of sinking were more remarkable than at any previous period of the disease, discontinue all medication, except two grains of opium once in two hours? and why did the amendment of the patient so immediately follow?

Let the reader carefully observe that in this, as well as in the preceding case, the medication always keeps a little a-head of the disease, and he provides against any remark upon this striking circumstance, by observing that the symptoms in bad cases should be anticipated and prevented.

Wonderful and prophetic must have been the foresight of our author, if he could in every instance predict the aggravation of symptoms which so invariably followed every increase of his *medication*.

In some instances indeed this principle may be admissible, as for instance in intermittent fever, and other diseases of

regular periodical paroxysms, but in diseases so irregular in their paroxysms as the present, we should only be exhausting the excitability of the system which is so much needed when the supposed paroxysms of sinking do occur. The perplexity and confusion to which it leads, must also be extreme, for nothing is more important than to distinguish clearly between the effects of medicines, and the symptoms of disease. We fear that this ambiguity has been with our author the source of a great deal of error.

The third case is one of an extraordinary character. It resembles so very nearly a case of inebriety to which we were once called, that we will take the liberty to inquire, whether during the night preceding the attack, and while he was in attendance on the sick, the patient did not make liberal use of ardent spirit. The fact that stimulus was regarded by the physicians as both the remedy and the prophylactic against this disease, might have been an apology for excess in this way, while his previous indisposition, and the night-watching, would have favoured its powerful influence.

The symptoms so strongly resemble those of intoxication, that we could not but make the above query, although we would not impeach the character of the patient and the acumen of the physician so much as to assert that this was positively the fact. If we are mistaken in our surmises, then let the case have its due weight, though we cannot perceive that any triumphant inference can be drawn from it. It is but one in three hundred and fifty, and we may fairly presume, one which best answers our author's purpose.

The two cases next detailed, are those which terminated fatally. To pronounce in decided terms the diagnosis and the practice in these instances erroneous, involves a heavy charge, but certainly it only becomes a more solemn obligation to express our opinion with promptitude and independence.

The first is the case of Miss A. C. who it seems had been long afflicted with hepatic disease.

For some days previous to the attack, she had been exceedingly exhausted by attendance, during both night and day, on the sick, and by excessive labour. She, too, was attacked with apparently hysterical symptoms, and with paroxysms of sinking, for which see the case.

It is obvious to every one that this was a case which required to be treated with the utmost tenderness. The complication of previous disease, and her state of exhaustion from fatigue, with the nervous irritability which usually accompanies it, and which manifested itself remarkably in the incipient symptoms, would have rendered her unusually sensible to every remedial as well as morbific agent. But what course did the physician pursue? From apparent apprehension that she would immediately sink, an apprehension which does not appear to be warranted by any of the cases which he has related, or which he had personally observed, he immediately exhibited forty drops of tinct. opii. Five of the arsenical solution, five of oil of peppermint, were given every *two hours*, while hot spirit and water, and hot tinct. of camphor and water were given *ad libitum*.

If we suppose the commencement of this case to have been hysteria, occurring in one who had been long affected with chronic inflammation of the liver, or other viscus, and induced by unusual fatigue, what effect should we expect from the above excess of stimulation? We may safely presume that its influence would be three times as great as under ordinary circumstances; first, from the unfortified state of the system, and second, from the want of harmony and equality of action in the vascular system, and from the diseased condition of certain parts, in consequence of which the above agents would not become equally diffused, but would spend their force upon parts already morbidly excited, and would increase vascular obstructions wherever they existed. At the same time the general excitement might not be very obvious, and would soon end in indirect debility. The first effect, however, would be to quiet the patient, and to produce some general

excitement. This would be followed by frequent and feeble pulse, delirium, restlessness, and profuse sweating. The reader will observe that this was the condition of the patient on the third day, when two drams of alcohol every hour was added to the *medication,* and an extra dose of two grains of opium was given. The next day there was "a severe paroxysm of epigastric sinking. Three fluid drams of tinct. opii. (equal to four grains by the mouth,) were given by injection. In the evening there was an increase of delirium.

At eleven, while the medication was continuing, and all the medicines remaining *kindly* on the stomach, she sunk into a deep coma, the lips became purple, and the respiration interrupted. There was *effusion in the bronchiæ, and throbbing in the larger arteries.* The pulse, though seemingly full, was extremely soft and weak. Just before death there were slight convulsions.

Let it be carefully observed that, in the two first of the three preceding cases, there was frequent vomiting, and that the remedies with which the stomach was gorged, were often rejected, so that the practitioner was compelled to desist even when the patient was at the worst. In the next case, which also terminated favourably, there was copious diarrhœa, regarded as so fatal a symptom by our author, and which contended obstinately against the *medication.* In the present case, however, the first which terminates fatally, the practitioner is not foiled in this way. Every thing remains on the stomach, and from the beginning to the end, there is no evacuation, whatever, from the alimentary canal. What inference shall be drawn from these facts?

The subject of the last case, "was a person of slender constitution, and rather feeble health." The symptoms of disease in this case were less equivocal than in the preceding. They however rather indicated a gastric affection, than a case of a peculiar epidemic, characterised by a sinking of the vital powers. It commenced with pain in the bowels and diarrhœa, which was suppressed by opium. Soon after this he ate

heartily, probably with a morbid appetite, a full dinner. Paroxysms of epigastric sinking occurred soon after, which we believe are not at all remarkable in persons of a similar constitution, in almost every variety of disease. In such, they very often occur some hours after the use of opium. Persons of a "slender constitution," and irritable nervous system, have often an idiosyncracy by which even a small quantity of opium will produce unpleasant effects of this character. The pulse was natural. Most persons would certainly have pronounced the disease at this period a gastric affection, and it appears to us that they could only have been influenced to form a different opinion by the prevalence of a peculiar epidemic, which had occasionally commenced in a similar manner.

We trust, however, that our scrutiny of the preceding cases on which our author so much relies, has shown that he may have been altogether mistaken with regard to the existence of such an epidemic, and if so, he certainly would not be warranted in suppressing at once, in the present case, all evacuations, and in employing only stimulant and astringent remedies. The epigastric sinking, upon which he lays so much stress, is an exceedingly vague diagnostic symptom, and is common to a variety of diseases, but belongs more particularly to certain gastric affections. It may proceed from various causes, as for instance, congestion of the portal system, morbid excitement of the mucous membranes, &c.

When attributable to these sources, it is obvious that stimulating and astringent medicines must be pernicious in the extreme, and indeed ourselves, and we presume others, have often seen paroxysms of extreme epigastric distress, produced by this class of medicines, when exhibited in these cases. It is one of the most common of those phenomena which occur when patients are said not to bear bark, brandy, &c.

It seems that our author, while the pulse was natural in strength, and while there was not much muscular prostration, (for indeed the patient used the catheter upon himself, until

the last day) "enters upon a regular course of *medication*," consisting of one grain of opium every two hours, with three drams of tincture of cinchona, and the same of brandy every hour. A little wine *occasionally*. During the first night after the commencement of this course, four extra pills, of two grains each, of opium were given. It is unnecessary, however, that we should remark upon the details of the case, the practice being almost identical with that of the preceding cases. As the disease advances, the *medication* waxes stronger and stronger, until two grains of opium are given every two hours, forty *gtts* tinct. opii. as often, together with spirit, &c. There was occasional vomiting during the progress of the case, and occasionally a griping of the bowels, which threatened evacuation; these, however, were generally suppressed by extra pills of opium. In one instance only, was an enema employed, which only served to irritate the alimentary canal. On the night of his death, the patient vomited several times; there was also furious delirium, restlessness, and finally, an *epileptic* tremor, with which the patient expired. Let the candid reader decide, whether these symptoms are most characteristic of *spotted fever* or of *typhus opialis*.

That the above cases have a common character in some respects, we do not deny, but it appears to us, that they, one and all, receive their impress from the uniform and extraordinary medication which was employed. If we suppose a practitioner to be so possessed with the idea of the prevalence of a peculiar epidemic of the above character, assimilating to itself every other form of disease, as that he should see nothing in the slight affections, which are every day occurring, but the incipient symptoms of this formidable pestilence, and should order his *medication* accordingly, what would be the result?—The exhibition of opium, the suppression of accustomed evacuations, the use of astringent and stimulating remedies, would surely produce symptoms common to all; and if we suppose the practitioner to be so far infatuated as to see in the peculiar effects of his remedies, nothing but the traits

of his bug-bear pestilence, his medication would of course become more vehement, and the symptoms of the disease correspondingly prominent. Unhappy the patient who at this juncture should apply to the physician for the relief of hysteria, belly-ache, diarrhœa, sick stomach, rheumatic pains, or the effects of surfeit. The dram-drinkers, and opium-takers, would perhaps escape unscathed, and perhaps some of them would even exhibit instances of remarkable and sudden cure. The vigorous powers of nature would, in others, resist the *morbific* influence. In others (and in three hundred and fifty there would be many such,) who by idiosyncracy were more susceptible of its influence, the artificial disease would assume an alarming aspect, until the powers of life should spontaneously rally, and reject every medicine introduced into the stomach. But what would be the result in those cases in which the guardian power of nature did not so readily respond, or in which they were, at an early period, overwhelmed?

On the other hand, let us now suppose the observation and opinions of the practitioner, in relation to the prevalence and character of the epidemic, to have been correct, and what inferences will follow?

It is important, however, that we should first state, that upon the appearance of the pamphlet enumerating the three hundred and fifty cases, as having occurred in the practice of one physician, Dr. Cone,* and within a short period, the good people of Middletown were astonished at this intelligence of such a formidable pestilence walking abroad among them; for it seems that this was the first intimation which the public had received of it. The authorities of the city, therefore, immediately called a meeting of the physicians for the purpose of investigating the subject. In Middletown there are several physicians, and some whose practice is more extensive than that of Dr. Cone. What then must have been the double astonishment of the authorities, when they learned that

* Dr. Miner was surely employed in consultation.

all these cases had occurred in the practice of Dr. Cone, while the other physicians concurred in reporting, that they had witnessed no cases of that character, and that the diseases then prevailing, exhibited nothing peculiar or extraordinary.

Now it is certain that there must either have been a morbid longing after Dr. Miner and his coadjutor, as one of the prominent symptoms of this disease, and which constrained the patient to send immediately for them, in consequence of which every individual case fell into their hands; or the other physicians must have had their due proportion.

As we dare not trust to the former supposition, we must admit the latter. We presume, therefore, that Dr. Cone's cases did not constitute more than one-fourth of the whole number which occurred in the city and immediate vicinity. If then we suppose our author to be correct in his principles and practice, if, as he says, the practice commonly resorted to in the ordinary occurrence of disease, bleeding, vomiting, and purging so certainly rendered mild cases bad, and bad cases fatal, what horrible carnage must have been produced by his brethren of the faculty, so blindly urging the lancet, purges and emetics, and without any suspicion of the prevalence of a peculiar epidemic.

If we suppose that there occurred five hundred cases in the practice of the other physicians, and certainly this is a very moderate estimate; and if we suppose, too, that they were altogether unaware of the peculiar character of the disease, and of the treatment of our author, so absolutely necessary to conduct it to a favourable result; we may safely estimate that not less than one in five would have fallen victims to their ignorance and obstinacy. From the earnestness with which our author urges the exclusive propriety of his *medication*, and the unequivocal language in which he condemns and deprecates every other mode of practice, as the suggestion of madness and folly, we can not think that a fundamental error in the diagnosis and treatment of the disease, could have been attended with a less fatal result.

But, had this been the case, would the authorities of the city have been under the necessity of instituting an inquiry to ascertain the existence of such an appaling pestilence? Would not the frequent hearse, and the black livery of grief, have told, in every street, the melancholy truth? Would the physicians, while their dead were multiplying around them, have presumed to report the non-existence of an epidemic which was declaring itself in language that could not be mistaken?

But, although we might say more, we have perhaps said enough, and some may even think too much and too censoriously. Let it be observed, however, that we have no where impeached the honesty of Dr. Miner's intentions, although, even for this, he has given us an example in his own writings; nor have we denied him an ordinary share of talent and learning; but we do, without reserve, declare that the few pages which we have examined above, exhibit the most melancholy instance of self deception and pertinacity of opinion, that we have ever witnessed.

To Dr. Miner we owe no apology, for the freedom of our remarks. He who lavishes upon his brethren of the profession, the epithets of ignorant, prejudiced, mad, barbarous, malevolent, and temporising, and even makes his systematic writings the vehicles of personal sarcasm, can point out nothing in the above strictures, which he can pronounce uncharitable.

N. B. In justice to the author, we would here notice a circumstance which had escaped our observation, that minutes of several of the above cases were made by Mr. L. at the time of their occurrence.

ART. III.—*Commentaries on Diseases of the Stomach and Bowels of Children.* By ROBLEY DUNGLISON, M. D. &c. &c. Lond. 8vo. pp. 201, 1824.

To the philanthropist nothing can be more interesting than a knowledge of those enemies of the human race, whose baneful influence is directed against the most vulnerable and helpless class of our species. While in the enjoyment of fully developed faculties, we can detect merely so much of the insidious inroads of disease, as to fill us with apprehension, while they suggest, in many instances, only a probable means of defence, how much more dreadful is it when its malignant operations are screened from detection in the suffering victim, who can express no more than indefinite distress by his unintelligible cries.

He who can trace the progress of disease and devise the means to intercept its action, is entitled to a rank among the best and greatest, for as life is the only human possession which, when lost cannot be regained, he, who saves a life, is the author of the greatest benefit that man can confer on man. To all, therefore, who investigate the nature, and discover antidotes to the effects of those morbific agents, which render human life uncertain, much gratitude is due, and still more praise belongs to him whose genius and devotion to humanity, enable him to surmount the peculiar difficulties which are presented to those who undertake the relief of infantile distress, which has no tongue for its expression.

With these sentiments we opened the present volume, in the prefactory pages of which, our expectations were in no small degree excited by the declaration, that it was intended for the "professional reader."

Our author very justly condemns the sentiment, that we must despair of obtaining a correct diagnosis of the diseases of children, on account of the peculiar difficulties which the want of intelligence and the helplessness of the patient present, and we give him credit for encouraging us to exertion

in this department of our profession, by assuring us that the desired object is undoubtedly within our reach.

"It has been a general complaint," Dr. Dunglison observes, "that whilst the diseases of adults have monopolized the attention of professional writers, those of childhood—a period of the greatest disease and mortality, and during which many individuals who, if permitted to live, might have proved most useful and ornamental members of society, are prematurely snatched from existence—have been comparatively neglected. This has too much arisen from an idea that the diseases of young children cannot be satisfactorily investigated, from their not being able to describe their complaints, and that, consequently, the practice of the physicians are generally empirical. This is not, however, correct. To the experienced eye, the deviations from health are readily recognised. The state of the skin, secretions, excretions, tongue, eye, breath, fatness or leanness, gestures, cries, &c. &c. will sufficiently indicate the difference between the healthy and diseased condition." This latter observation is quite correct: it is a fact that many have remarked, that "a sick child is known by his cries," and at present there exists but little doubt of the ability of a good physician to distinguish a sick child from a healthy one, or in the words of our author, readily to recognise the deviations from health.

This great object accomplished, we next look for the means of detecting the kind of deviation from health, the locality of the abberration from healthy action, the consequences to be expected from the diseased action, and the means best calculated for its suppression. The *séméiologie physiognomonique* of M. Jadelot, is here introduced as furnishing an index to various forms and localities of disease. Notwithstanding the extensive experience upon which M. Jadelot has founded his ingenious key to the diagnosis of infantine diseases, we cannot yet think ourselves authorised to accept it as a sufficient index to our prescriptions.

The expression of the countenance is undoubtedly, in a great majority of instances, a sufficient monitor of the existence of disease; not only in infants but in patients of all varieties of age and condition; but we feel that a peculiar and perhaps a very rare talent is necessary for the discrimination of analogous diseases, by certain traits of the countenance. Indeed we despair of arriving at that degree of skill in *séméologie physiognomonique* which enabled M. Jadelot to detect "an accidental complication of verminous affections," "by an unusually marked state of the *nasal trait.*"

It is true that every state of disease attended by pain, will give rise to certain changes of the countenance from its usual expression, but affections of the mind will produce the same effect; and it is not always easy to distinguish in an infant's face, between the expressions which arise from moral and physical causes—far more difficult, if at all possible, must it be, to trace in the ever varying lineaments of the face, the history and location of a peculiar disease.

Our author, however, has not confined himself to this method of relieving us from the difficulties under which we labour in treating the diseases of children. He has specified a number of the morbid affections of infants, and we are happy in recognising in his description of them, the same diseases, the same symptoms, and the same treatment which we have been familiar with heretofore. In the beginning of his work he has favoured us with a classification of the various worms, as they are vulgarly called, which infest the human intestine. The observations of Rudolphi, Bremser and Frank, are here condensed into a very clear system of helminthology. A knowledge of the descriptive character and habits of the various species of worms which give rise to so much misery, and indeed mortality in our species, is undoubtedly important, inasmuch as it forms a basis for authelmintic practice. The various kinds of entozoa, locate themselves in various parts of the human body, indicate their existence by various symptoms, and are to be destroyed and expelled by various means. A knowledge of the species of worm, is therefore,

in some measure necessary to a correct prescription of vermifuge medicine. Our author has accordingly prepared us, by his minute selections from the natural history of the entozoa, for a full and infallible diagnosis and practice, in all cases of worms in children. We therefore follow him in the hope of being instructed in all the mysteries of inverminology and authelmintology, and in many secrets which it would be well for the *professional reader* to learn.

In treating the question of the origin of intestinal worms, our author evinces his enmity to the doctrine of equivocal generation.

"With respect to the mode," he observes, "in which worms are generated in the human body, various opinions have been entertained from the earliest ages to the present period. The chief controvertists may, however, be *condensed* into two great classes; viz. those who believe in equivocal generation, and those who consider that the germs must be always received from without.

"The first opinion ranks among its supporters almost all the names of antiquity since the time of Aristotle, as well as those of Needham, Buffon, Patrinus, Treviranus, Rudolphi, Bremser, Himly, and others, of the moderns; whilst the second class comprises those who believe in the Harveian maxim, *omne vivum ex ovo*—amongst whom may be ranged the majority of the physiologists of the present day." "There *seems* every reason," he adds, "for supposing that the latter class of believers is the most correct; whilst at the same time it must be admitted that there are some anomalies which it is very difficult, under such belief to reconcile."

What these anomalies are, our author does not inform us, nor can we recollect any instances that are incompatible with the doctrine which is honoured by Dr. Dunglison's approbation, and in support of which he quotes the following observations from Dr. Good:* "that the atmosphere is freighted with myriads of insect eggs, that elude our senses, and that

* Study of Medicine, Vol. i.

such eggs, when they meet with a proper bed, are hatched in a few hours, into a perfect form, is clear to every one who has attended to the rapid and wonderful effects of what, in common language, is called a blight upon plantations and gardens. I have seen, as probably many who read this work have also, a hop-ground completely overrun and desolated by the aphis *humuli*, or hop-green-louse, within twelve hours after a honey-dew has slowly swept through the plantation, and stimulated the leaves of the hop to the morbid secretion of a saccharine and viscid juice, which, while it destroys the young shoots by exhaustion, renders them a favourite resort for this insect, and a cherishing *nidus* for the millions of little dots that are its eggs. The latter are hatched within eight and forty hours after their deposit, and succeeded by a host of other eggs of the same kind; or, if the blight take place in an early part of the autumn, by hosts of the young insects produced viviparously; for, in different seasons of the year, the *aphis* breeds both ways.

Now it is highly probable that there are minute eggs or ovula, of innumerable kinds of animalcules, floating in myriads of myriads through the atmosphere, so diminutive as to bear no larger proportion to the eggs of the aphis, than these bear to those of the wren or the hedge-sparrow; protected at the same time from destruction by the filmy integument which surrounds them, till they can meet with a proper nest for their reception, and a proper stimulating power to quicken them into life; and which, with respect to many of them, are only found obvious to the senses in different descriptions of animal fluids. The same fact occurs in the mineral kingdom; stagnant water, though purified by distillation, and confined in a marble basin, will, in a short time, become loaded on its surface or *about its sides*, (qu.) with various species of coufervas; while the interior will be peopled with microscopic animalcules.

So while damp cellars are covered with boletuses, agarics and other funguses, the driest brick walls are often lined with

lichens and mosses. We see nothing of the animal and vegetable eggs and seeds by which all this is effected; but we know that they exist in the atmosphere, and that this is the medium of their circulation. How far the tales may be true, of living animals being found in abscesses in different parts of the body, and especially in scirrous and pustulous exanthems, this is not the place to inquire; but conceding the fact, we can only account for it by supposing their respective ovula to have been admitted into the system with the air or food we take in; and to have been separated as soon as they acquired possession of a proper nursery.

"We have strong reason to believe, however, that many of the eggs or animalcules that are traced in animal fluids, occasionally find other receptacles out of the body that answer their purpose as well, and seem to keep up their respective species; and, consequently, that provide a stock of eggs, larvas, or insects prepared to take possession of any decomposing animal substance, as soon as it is ready for their reception: and we are hence able to account for the presence of animalcules in such situations, without being driven to the necessity of supposing them to have been generated therein; and see how it is possible that they should continue to exist in a regular chain of succession, instead of being produced anomalously and equivocally by the *bildungstrieb* (as the German physiologists call it,) or formative effort of a living principle in substances in which life has confessedly ceased to exist."

Rudolphi, also has observed, that various species of worms commonly found in the human intestines, are occasionally met with in stagnant water and rivulets. Linnæus, Gadd, Unzer, Tissot, Leuwenhoek, Schaffer, and Palmer, have asserted the same fact from their several experience. But it is not necessary to pursue this subject farther. The many facilities which are afforded for the intrusion of animalculæ or the lava of insects into different parts of the human body, especially into the alimentary canal, and the protection from injury which they enjoy, on account of their minuteness, affords a much more rational explanation of invermination than

the unaccountable and absurd doctrine of equivocal generation; and we believe that it is now almost universally received. The strongest objection to the doctrine of the germs of intestinal worms being received with the food, is, that they must in this case escape from the digestive powers of the stomach, &c. to which they are exposed. The fact, that worms are seldom found in children whose digestive functions are healthy and strong, but on the contrary, that they are abundant only when the digestive powers are much impaired, goes far to favour the idea, that their germs are capable of withstanding the action of the stomach to a certain degree, and pass uninjured through that organ, when it is not in possession of its natural vigour.

As it is undoubtedly true that a debility of the digestive organs generally, if not always precedes the appearance of worms in children, and remains while they continue to infest the intestine, our author very properly enumerates among his most important remedies, the diet, habits, and medicines, which are calculated to invigorate the system. The propriety of this treatment will be admitted both by the advocates of equivocal generation, and those who believe in the admission of ova or animalculi *ab externo:* for the former party argue that it is by partial or unhealthy digestion, that the peculiar matter is produced from which the entozoa derive their existence. Thus we find that, in worms, as in a large number of diseases, although we differ very widely in the pathology, the arguments derived from various principles, happily tend to the same practical conclusion.

With regard to the particular authelmintics and general practice recommended in the "commentaries," Dr. Dunglison has favoured us with nothing new, and we forbear to repeat what we presume every "professional reader" is already familiar with.

One original observation, however, contained in this chapter, we feel in duty bound to record, in evidence of the author's sagacity; namely, that *worms are not the less to be*

dreaded when they attack organs essential to life. It is truly matter of astonishment, that the very fact that worms could even be guilty of attacking an "*organ essential to life,*" should have escaped the observation of the numerous sages who have heretofore inquired into their villainous practices.

The next disease of which our author treats, is constipation and retention of the meconium. "This substance," he observes, "occasionally adheres with so much pertinacity to the parieties of the intestines, as to resist the most energetic purgatives; whilst, at other times, one portion is evacuated, and the remainder retained for a longer or shorter period, giving rise to symptoms of considerable intestinal disorder.

"Whatever may be the use of this substance during the fætal state, its *excretion* soon after birth is of the utmost importance; as its presence in the intestinal canal must interfere with the proper assimilation of the nutriment taken by the infant; and not only so, but it is found to give occasion to tormina, flatulence, and other symptoms of irritation. Whenever, therefore, an infant, some days after birth, is observed to be affected with these symptoms, it is not unlikely that they may have been produced by a retention of some portion of the meconium, although a *lapse of time* may have *occurred* sufficient to render it probable that the whole had been discharged."

The colostrum failing in its usual effect of expelling the meconium, Dr. D. recommends, of course, the exhibition of laxatives and cathartics. He recommends the insertion of a piece of yellow soap into the rectum, which will sometimes succeed when the common pharmacopæia of the nursery has been exhausted. But we regret that he discountenances the employment of clysters in these cases, as the meconium generally occupies the lower intestines, these applications are peculiarly adapted to its removal, and may, in a great many instances, supercede the necessity of introducing medicinal articles into the stomach; a practice which is troublesome, and

which on various accounts ought never to be unnecessarily resorted to in the treatment of infants. The doctor's objection to enemata, is that "they are liable in careless hands, to be given at *too high a temperature.*" If we are to avoid the use of all medicines which would be dangerous in careless hands, the shortest way would be to close our materia medica at once, and proscribe all manner of apothecaries.

In the treatment of constipation at more advanced ages, whether hereditary or from accidental causes, we find in the "commentaries, &c." nothing new or remarkable; we may however observe, *en passant*, that the author generally prefers in these cases the use of aloes, heretofore strongly recommended by professor Hamilton of Edinburgh.

In speaking of calomel, we regret that our author has neglected to discriminate the cases in which it may be particularly useful. He has indeed despatched the consideration of this peculiar and excellent remedy for various disorders of the bowels, with a degree of brevity that argues but little in favour of his knowledge of its character, or of the diseases to which the chylopoiétic viscera are liable. If this portion of the "commentaries, &c." had appeared at the time when Paracelsus introduced chemical compounds into the materia medica, it would not have excited much surprise; but in the present improved state of medical science, we know of no excuse for this negligent manner of commenting upon diseases and their remedies, except one which may apply to the particular work before us, and that is, that the author has, in more instances than one, brought himself into a dilemma, from which it would be quite unreasonable to expect any human ingenuity to extricate him, by exalting to the rank of an independent disease, a mere symptom which is common to many diseases, vastly different in their nature and location. Constipation may arise from so many causes, that it is generally to be considered as symptomatic of diseases, not originally depending upon a torpor of the bowels. In diseases of the liver, the stomach and the mesenteric glands, the bowels are frequently

and obstinately constipated; and in many of these cases, simple cathartics succeed only in producing temporary discharges, without appearing to meliorate the character of the disease. Under these circumstances, the whole list of materia medica affords no rival to calomel. In marasmus, attended by vitiated secretions of bile, obstructions of the mesenteric glands, and greater or less derangement of the whole process of digestion, it is from calomel alone that we can expect a permanent restoration of healthy action.

The chapter on constipation is concluded with the following advice, which is quite in good keeping, at least with the desultory character of the preceding commentary. "When the state of constipation has once been removed, its recurrence must be obviated by proper attention. For this purpose, the use of cathartics had better be gradually discontinued; and, especially if there be any hereditary predisposition to the affection, the use of the aperient food, where the child is too old to be at the breast, should be inculcated: such as arrow-root sweetened with brown sugar or treacle, or beer *edulcorated* with the same materials. Where the child is at the breast, the diet of the mother and child must be regulated as has been previously recommended.

"Where, along with constipation, children have been affected with languor, yellowness of the eyes and skin, high coloured state of urine, and a clayey condition of the alvine evacuations, in addition to purgatives, the food must be regulated, bitter remedies ordered, and warm fomentations or frictions applied to the abdomen every night."

What can possibly be more indefinite and unsatisfactory than advice of this kind? or what practice more perfectly futile, supposing that the aforesaid languor, yellowness, &c. &c. proceeded as the case would most probably be, from a diseased liver? But we forget that these "commentaries, &c." are intended for the "professional reader," who we presume is expected to make up for deficiencies, correct errors, &c. according to his own knowledge and sagacity.

The chapter devoted to the consideration of "acidity, flatulence, and colic," is quite too common-place to require any comment.

The fourth chapter contains the results of the author's reading on the nature and mode of treatment of diarrhœa. We are here presented with copious extracts from M. Andral's dissections in cases of this disease, and quotations from other authors, tending to prove that the mucous coat of the intestines is sometimes inflamed, and in other instances simply or mechanically engorged with blood. Hence, the discharge of blood, in some cases of diarrhœa, is not to be attributed to inflammation or abrasion of the internal tissue of the intestine. M. Andral is of opinion that the blood may be effused into the cellular tissue surrounding the intestine, without a concomitant injection of the mucous coat—but when the mucous coat is *mechanically* injected, it exhales blood into the cavity of the intestine. This state of the parts may arise from irritating matter contained in the intestines, or from the obstruction of the vena porta, as Morgagni has observed. Our author, however, has given us but little clue to a distinction, through the symptoms exhibited, between diarrhœa of this kind, and diarrhœa attended by inflammation. Nevertheless, he cautions us to beware how we prescribe without having made such discrimination.

"The great difficulty," he observes, "is properly to discriminate the cases in which purgatives are to be advised, from those in which they should be carefully abstained from. In general, where the child is suffering from copious, watery stools, without there being much pyrexia, or pain of the abdomen on pressure, present a dose of some brisk cathartic, as calomel joined with rhubarb: scammony or jalap, may be usefully administered; but should symptoms of abdominal inflammation be concomitant, the more gentle laxatives, as cold-drawn castor oil, rhubarb and magnesia, or syrup of senna, should be preferred, merely for the purpose of evacuating the upper portions of the intestinal tube of any irri-

tating matter which may be present. To fulfil a similar indication as regards the *super-diaphragmatic* (qu.) portion of the *digestive canal*, an ipecacuanha emetic may be advisable."

After the numerous and almost insurmountable obstacles, which our author has prepared us to expect, in the way of a correct discrimination between those cases which required active cathartics, and those in which these agents are inadmissible, we are very agreeably surprised to find that a touch of the pulse, and a little pressure on the abdomen will be sufficient to remove all our fears. But unfortunately we recollect that a few pages back the author has informed us, that nothing is more common than the absence of all kind of pain in cases where numerous ulcerations have covered the internal surface of the intestines, and on the other hand, it is not unusual to find patients complain of acute pain in the abdomen, although the mucous coat of the intestines is not in the least inflamed. It is no uncommon thing for doctors to disagree—but which side shall we take when a doctor disagrees with himself.

We have nothing particularly to object to in the treatment recommended by Dr. D. for the various forms of diarrhœa, as it is generally that which has been employed very universally. One exception, though, we must make, namely, the omission of blood-letting in those varieties of the disease confessedly febrile and inflammatory.

The fifth chapter, on vomiting and cholera, contains nothing more than is known in every nursery: we pass also through the commentaries or apthæ, inflammation of the stomach and intersusceptio, without finding any thing to arrest our attention; nor, indeed, would the soporific effect of this learned work, have been interrupted in the concluding pages, but for the sudden appearance of a rhetorical figure that is truly calculated to appal professor Beattie himself. "In gastritis, recourse must be had, as in every other dangerous internal inflammation, to bleeding, either generally or by leeches,

according to the age of the patient. *This should form the sheet anchor!*" Here is an anchor foundry with a vengeance, which if brought to perfection, might be turned to much better account, than copying commentaries on the diseases of children.

Upon the whole, to do the author of the present work full justice, which is in all instances our desire, we must grant that he has read numerous works on the diseases of children, and that he has selected from them much useful matter—though we think that he has neglected the pathological department of his work: and also that his practice, generally, is not marked by the precision and energy, which the present state of medical science would warrant. There appears to be too much of that unfortunate disposition to temporise—to try the effect of this, that, and the other palliative, before we *venture* upon a decisive remedy. This practice is not only calculated to injure the character of our profession, but we are also convinced from much observation, that it has resulted in the loss of many lives, which might otherwise have been prolonged.

One other remark we must add. As the author of the "commentaries, &c." has displayed so much knowledge of various languages, we cannot account for the strange liberties which he has taken with the rules of his own, (we presume that he is an Englishman.) In comparing the state of the system induced by excessive cathartics, with the effects produced by worms, he says, that it "almost merits as much attention as the worms *themselves.*" "The *oleum empyreumaticum* was found to be extremely prejudicial to *parasitic existence when out of the body.*" Some puzzling questions are suggested by this beautifully formed sentence. Firstly what is "parasitic existence?" We assure our readers that out of pure devotion to their interests we have rubbed all the hair from the neighbourhood of our organs of perception, judgment and invention, in endeavouring to excite them to furnish us with an interpretation of this momentous phrase—

but all in vain. Sometime we have considered it abstractedly "parasitic existence"—again we have tried it conditionally, *i. e.* "out of the body"—but then, again, to be *parasitic*, it must be connected with a body. Here the *oleum empyreumaticum* came to our relief, for in all probability the author meant the condition, "out of the body," to relate to it—But again, if the *oleum empyreumaticum* was "out of the body," how could it effect the *parasitic existence*, which in this case must be in the body?

We can form no decent idea of "*flatulent milk*," p. 103. The *extenuation* of the parieties of the intestines is also a curious process, p. 116. To "shield, (*i. e.* protect,) a nauseous flavour" appears to be a very unnecessary measure, p. 77. "Animalculæ gregariously involved amongst each other," (p. 70.) is a very awkward attempt at learned affectation. .

ART. IV.—*A Treatise on the Physical and Medical Treatment of Children.* By WILLIAM P. DEWEES, M. D. Member of the American Philosophical Society of Philadelphia, and of the Philadelphia Medical Society; Lecturer on Midwifery, &c. H. C. Carey & Lea. 1825. 8vo. pp. 496.

IT is not long, since we had occasion to give an account of an excellent work on obstetrics by the author of the present work. We always feel a pleasure in noticing the writings of Dr. Dewees, because we are sure of always finding much which will repay us for the trouble of perusing them; and afford us an opportunity of communicating interesting information to our readers. The present volume is divided into two parts. In the first, the author treats circumstantially, and, according to our judgment, ably, of the *physical education* of children.

Although we regard this a highly interesting subject, we shall not now bestow any particular attention on it, but pass on at once to an analysis of the second part of the volume, which treats of the *diseases of children*. We do this be-

cause we wish to bestow much more attention upon the former subject than our occupations will at present admit; and we therefore defer the consideration of this part, until our next number, in which it is our intention to enter into a full and elaborate discussion on this subject.

Chapter I. Of the Want of Respiration. Dr. Dewees thinks that "the premature tying of the cord is often, if not always, injurious to the child." In common with White, Denman, Baudeloque, and others, he is of opinion that the cord should not be tied until it ceases to pulsate. Dr. White observes, "that the pulsation of the arteries proves the existence of the fœtal life. The existence of the fœtal life proves the imperfection of the animal life. While the animal life is imperfect, the fœtal life ought not to be destroyed. The navel string, therefore, should never be divided while there is any pulsation in its arteries." Dr. Dewees accords fully with Dr. White on this point, and combats the opinion expressed by Burns, that there is "no necessity of delaying the division of the cord when the child is vigorous and cries lustily." For our own part we are perfectly satisfied that the opinion advocated by our author, is correct, and that its observance is of much more importance than the sentiments of Burns would lead the young practitioner to suspect.

Chapter II. Of Syncope, or Fainting. Speaking of the mode of managing new-born infants in a state of great feebleness, Dr. Dewees observes, that he has witnessed "two instances of complete recovery, where, from all the data that could be collected, the children had but just exceeded the sixth month. These were neither washed nor dressed for many days; they were preserved in a uniform temperature by means of a stove and a bed of cotton. A few drops of warm whey, from time to time was all the food they received for three weeks; but on which they throve surprisingly." Had these children been subjected to the fatiguing operation of washing and dressing, the probability, as our author observes, is, that they would not have lived.

"It now and then happens, that a child may be rather feeble when first born, but recover its powers by proper attention, and every thing giving promise of doing well—when of a sudden, it will become pale, flaccid, cold, with a long interval between each breathing, and at last respiration appears to stop; the fingers and hands become blue, or black; the lips livid, and the eyes fixed, and but half closed; the pulse extinct—in a word, looking "the image of death." After remaining in this condition for a short time, a slight convulsive motion will appear to play about the mouth; an imperfect inspiration will be taken, followed by an expiration, attended by a peculiar noise; the lips become less livid, as do the hands and nails; the eyes move languidly, and the pulse may now by close attention be perceived, like a vibrating thread, at the wrist; an attempt to cry is now made, but the sound is so feeble, that it can be heard only at a very short distance—and this finishes the paroxysm.

"After the 'fit,' as it is called, has terminated, the child will appear languid, and uneasy, for some time; it will generally swallow, if any fluid be presented to it, provided it be not too soon after the paroxysm. A discharge from the bowels almost always takes place during the 'fit,' of a small quantity of a very green fluid. These spells are repeated at longer or shorter intervals, unless the disease be arrested by the influence of remedies, or death closes the scene."

The best mode of treating cases of this kind, consists in the application of flannels wrung out of warm spirits of any kind, and in exhibiting from time to time a little wine whey, or some other mildly stimulating liquid.

Chapter III. Of the Meconium. Dr. Dewees considers it of great importance to carry off completely this offensive recrement from the bowels of new-born infants. Upon this subject there is but little difference of opinion among practitioners. Our author gives the following case illustrative of the bad effects of the retention of this recrementitious material.

"A child born healthy, had its bowels liberally purged, as it was supposed, by the ordinary remedies. It remained perfectly well for several days, and had taken the breast freely. At about the eighth day, the eyes and skin appeared rather yellow, though its urine was not altered in colour. Its bowels

were a little affected, and had frequent, but very sparing stools; it hiccoughed very frequently; its skin was dry and hot; it became very restless, and refused the breast, though evidently very thirsty, as it would receive with greediness, water, or any other thin fluid, from a spoon. It would often start, and at such times would move its limbs violently for half a minute together. Its tongue was very white, and loaded with a substance resembling a stratum of coagulated milk. It did not puke, though evidently distressed at stomach, as it would frequently gag, but could get nothing up.

"Believing its distress to arise from some irritating cause in the first passages, we ordered it a tea-spoonful of warmed castor oil; to be repeated in two hours, if the first did not succeed. A second, and a third, were given without moving the bowels. Magnesia, in five grain doses, followed by a tea-spoonful or two of lemonade, were then given. It took a scruple of this medicine, with no better effect. Its stomach now began to revolt at every thing that could be offered it; and the purgative medicines were in consequence suspended. The abdomen began to swell, and to become very tense and shining. It could lie but on its back, with its little legs drawn close up to the belly, and was evidently in a state of great suffering. Its cries were piteous, and incessant; and its whole skin became bedewed with a cold sweat.

"Injections of various kinds were thrown up the rectum; the child was placed in the warm bath; but no stools were procured, for the little tinged mucus which came away every now and then by severe straining, did not amount to a stool. We had upon several late occasions with children, found a solution of the carbonate of soda, very useful in aiding the operation of medicine, in cases of constipation; we accordingly determined to administer a grain of this article in a tea-spoonful of luke-warm water, every fifteen minutes, until ten grains were taken.

"At the expiration of two hours and a-half, the bowels began to move, and in the course of three or four hours, there were ten evacuations, each of which evidently contained a quantity of the meconium, with the exception of the two first. The purging was now kept up by an additional tea-spoonful of castor oil, and was permitted to go on, until the meconium was no longer visible in the evacuations. Dr. Underwood gives a similar history; but one, in which a much larger quantity of medicine was exhibited."

Chapter IV. Of Jaundice. Children frequently acquire

an icterode appearance, without however being actually affected with jaundice. In this state the eyes are not yellow, nor is the urine tinged with bile. In true jaundice, however, these appearances always exist. Jaundice in its aggravated form is always a very serious complaint in new-born infants; Dr. Dewees objects to the use of emetics in this complaint. In opposition to the sentiments of Underwood, Burns, and Armstrong, he observes, that they "have not only failed in his hands to remove the disease, but have rendered the stomach so irritable, as not to receive any other remedy willingly." He advises the use of small doses of castor oil as the first step in the treatment of this disease. If the stools are not mixed with bile, small doses of calomel should be given on the following day, and continued until the bowels are freely moved. The purgative operation of the calomel may be aided by small doses of super-carbonate of soda. Our own experience is decidedly in favour of small doses of calomel in this disease. We have usually given this article in combination with ipecacuanha, in doses of one fourth of a grain of each.

Chapter V. Of Erysipelas. This is generally a disease of great danger in new-born infants. It is particularly apt to occur in crowded lying-in-hospitals, but is also not unfrequently met with in private practice. It generally appears about the nates, the neck, the small of the back, and face. It is a disease by no means of easy management. Dr. Dewees advises blisters where the situation affected will admit of their proper application. Where this cannot be done, he uses strong mercurial ointment, applied freely to the inflamed part. "We use this ointment differently, however," says Dr. D. "in the several stages of this inflammation; we shall therefore describe our method: and

"1. Where the part is inflamed, but not yet vesicated. When we see the inflammation in this stage, we cause the whole of the reddened part, as well as a portion of the sound skin, to be covered with the ointment; which is to be renewed, when the part is deprived of any portion of it.

"2. Where the part is vesicated, but the vesicles not opened. In this case, we cause the vesicles to be carefully opened, and the ointment applied as just directed for the first condition.

"3. Where the vesicles have opened spontaneously, and the part has become encrusted; but the inflammation is spread to either a considerable or limited extent. In this case, we direct the ointment to be applied only to the surrounding inflamed margin, and on a portion of the sound skin.

"4. Where portions have proceeded to suppurate, yet a part of the surrounding skin is inflamed. Under such circumstances, we open the collections of matter as early as possible; and apply the ointment to the margin, as above directed."

In our own practice we have frequently employed mercurial ointment in this disease, and very commonly with perfect success. In a few instances we have used a solution of corrosive sublimate, in the proportion of two grains to an ounce of water, and have found it quite as efficacious as the mercurial ointment. This practice was first mentioned to us by Dr. Schott of this city. Small and repeated doses of calomel, so as to keep the bowels gently open, ought never to be omitted in the early stages of the complaint. There always exists considerable hepatic derangement in this affection; and the bowels are almost uniformly disordered.

Chapter VI. Of the Suppression of Urine. New-born infants frequently do not pass any urine for many hours after birth. In some instances this if not relieved will occasion great distress and even death. Our author relates the following case.

"A very remarkable instance of this kind fell under the notice of our friend Dr. Parrish and ourselves, which we trust will require no apology for giving it in detail. Mrs. —— was delivered of a healthy baby, on the 15th of June, 1822. On the 20th, in the evening, the child showed uneasiness; and on the 21st, it cried violently, and continued to be much pained until the 25th. A variety of simple remedies were used for the relief of the urine, which had been either very sparingly passed, or entirely suppressed, most probably from the 20th,—but without success. On the morning of the 25th,

at ten o'clock, we found the abdomen very much distended, even to the scrobiculus cordis; the skin was shining, and the superficial veins were very much enlarged. The child had several very sparing stools, of a dark green colour: two tea-spoonsful of castor oil were given in the course of the morning. At half past one o'clock P. M., Dr. Parrish introduced a small flexible catheter, and drew off at one time eighteen ounces and a-half of a straw or cider-coloured urine. At seven o'clock of the same day, the child appeared perfectly relieved; it slept soundly, and took nourishment freely. Two more tea-spoonsful of castor oil had been given since the visit at noon, but without moving the bowels; nor did any water pass. As the child was easy, it was permitted to rest without disturbance.

"From this time, the water was regularly drawn off by the catheter, until the child's death, which happened on the 28th. It had gradually declined, from the time of our first visit, and its mouth had become very sore. Permission was not obtained to examine it.

"We have recorded this case on account of its great practical importance, though unfortunate in its issue. We have seen several instances similar in their general appearance to the one just related, and like it ending in death: we have strong reason to believe they may have died of suppression of urine, though we were assured that they had passed water."

Chapter VII. Of Apthæ. Dr. Dewees does not think that apthæ are often extended to the alimentary canal. He gives an account of a dissection in which he found the whole tract of the œsophagus literally blocked up with an apthous incrustation to the "*valve of the cordia?*" We presume the Dr. means the *cardiac* extremity of the œsophagus; we are not aware that there is any valve at this part. "The inner coat," says he, "of the stomach bore some marks of inflammation, as did several portions of the intestines." We believe ourselves that the apthæ seldom extend to the intestinal tube, but that they do so occasionally, we have had unequivocal proof from post mortem examination. In an examination of a case of this kind, which we lately made, we found not only the œsophagus, but a considerable portion of the small intestines covered with an apthous incrustation.

Dr. Dewees thinks that there is no good evidence of the disease arising from some peculiar condition of the stomach, or of its being a sympathetic affection, and he gives the following reasons for believing that it may be otherwise.

"1. We have recently seen this affection in two cases, where the stomach and bowels were in the most perfect order before the eruption; but they became disturbed a little during the progress of the disease.

"2. That this complaint has been very often removed by topical applications alone, where the efflorescence has been very considerable, and where there was no remedy of any kind addressed to the stomach and bowels.

"3. That we do not uniformly see this complaint, where there has existed great disorder of both stomach and bowels, and these of a permanent kind.

"4. That however the stomach and bowels may be disturbed by acidity or other inconvenience; or however long these may continue, if the child has had this complaint, it is not renewed, though the person is not exempt from a second attack in the same way as after measles or small-pox; for in certain chronic affections they may be again visited by this disease.

"5. That this affection is sometimes epidemic, as stated above; for Dr. Good informs us, that "not only all the children of the same family, however cautiously separated from one another, but many of those of the same neighbourhood, have been known at times to suffer from it simultaneously." (Vol. II. p. 391.)

"6. That this affection is almost always ushered in by some cerebral affection; as great drowsiness, or watchfulness—the first by far most common.

"7. That other portions of mucous membranes are liable to the same kind of eruption, without the condition of stomach or bowels being instrumental in its production; for we have seen it most plentiful, within the labia pudendi, as well as on the internal face of the prepuce."

Dr. Dewees states that in obstinate cases attended by frequent discharges from the bowels—particularly when the stools exhibit streaks of blood, the most decided advantage may often be obtained from a tea-spoonful of the *oil of butter*, given three or four times a day. "The oil of butter is pre-

pared by putting a lump of perfectly sweet butter into a tea-cup, and pouring on it a quantity of boiling water, and agitating it well with a tea-spoon, that it may be deprived of its salt—the oil is then skimmed off as it is wanted; should it not be sufficiently fluid, pour off the cold water each time, and add fresh warm water." We agree perfectly with Dr. Dewees in considering a solution of borax as the best local application for apthæ. When the mouth becomes red, livid, or ulcerated, a weak infusion of peruvian bark is an excellent remedy; about the third of a tea-spoonful is to be put in the child's mouth every hour or two.

Chapter VIII. Of Colic. This disease is very generally the consequence of improper feeding, during the first month after birth. It is in fact commonly the direct result of indigestion,—brought on by improper food or by some peculiar quality of the mother's milk. It is therefore obvious that the first and most important curative measure, is a regulation or change of the diet. As a palliative Dr. D. states that he has been in the habit of employing the following mixture, and that it has rarely failed to give instant relief.

R	Magnes. Calcinat.	-	℈j.
	Tinct. Assafœtid.	-	gtt lx.
	—— Thebaic	-	gtt xx.
	Aq. Fontanæ	-	℥j. M.

"Of this, twenty drops are to be given, when the child is in pain, and if not relieved in half an hour, ten drops more are to be administered. This dose is for a child from two weeks to a month old."

Chapter IX. Of Opthalmia. Dr. D. thinks that the remote cause of the opthalmia of new-born infants, is always gonorrhœal or leucorrhœal matter applied to the child during its birth. His reasons for this opinion are:

"1. Because it always makes its appearance within ten or twelve days after birth—a period in which such a cause might be supposed to act.

"2. Because in every instance in which we have met with this affection, we learned upon inquiry, that the mother was subject to leucorrhœa; and in some few instances, in loose characters, to gonorrhœa.

"3. The suddenness, extent, and severity of the inflammation, together with the profuseness of the suppuration, would seem to denote the application of some violent irritant to this tender and susceptible organ."

Leeching, purging with calomel and magnesia, and mild astringent washes to the eyes, are the principle means to be employed in combatting this disease. The astringent collyria must not however be used, until the inflammatory character of the disease has been reduced by local depletory and other antiphlogistic measures.

Chapter X. Of Ulceration of the Mouth. Ulcerations sometimes occur about the frænum linguæ, and along the inferior margin of the tongue, and gums, in infants, which often become a source of great uneasiness to the little patients. After purging the child pretty freely, Dr. D. has never known the use of the following topical application to fail.

℞	Sulph. Cupri	-	gr. x.
	P. C. Peruv.	-	ʒii.
	—— G. Arab.	-	ʒi.
	Mel. Comm.	-	ʒii.
	Aq. Fontanæ	-	ʒiii. m. et f. sol.

The sores are to be touched with this mixture and solution, twice a-day. "This," says Dr. Dewees, "has always put a stop to the disease."

Chapter XI. Inflammation and Swelling of the Breasts of New-born Children. If these swellings are left to themselves, or simply covered with emolient poultices, they never become troublesome. Rough handling and pressing, however, as is often done with the absurd view of pressing out the milk, never fails to do injury, by exciting violent inflammation and suppuration. We have lately seen a large abscess extending more than three inches in circumference, produced by such pernicious interference of an ignorant nurse.

Chapter XII. Of Dentition. Chapter XIII. Of the Diseases arising from Dentition. Of these the crustea lactea is the most disagreeable and troublesome. It is asserted by some that this eruption cannot be removed without running the risk of doing more serious injury to the child. Dr. D. is not of this opinion. He does not hesitate to attempt the relief of this disease by the most prompt remedies. His mode of treatment is to diminish the quantity of nourishment of every kind, and at the same time order small doses of sulphur, or sulphur and magnesia, in frequent doses, so as to keep the bowels loose, but not severely purged. Having purged the bowels, he commences with small doses of calomel according to the following prescription.

℞ Calom. ppt. gr. x.
Creta ppt. ℈j. m. div. in part. xx æquales.

One of these is to be taken every morning and evening. If they purge, a drop or half a drop of laudanum must be added to each dose.

Dr. D. goes on to treat of the various other cutaneous eruptions, particularly incident to suckling infants; such as the strophulus confertus or tooth rash, strophulus intertinetus or red gum, strophulus albidus or white gum, strophulus volaticus, strophulus candidus, and sore ears——.

Chapter XIV. Of Tongue Tie. Chapter XV. Of Bleeding from the Navel String. Chapter XVI. Of Ulceration or Imperfect Healing of the Navel. When the navel exhibits an elevated ulceration of its whole surface, it may be readily healed by sprinkling it with white lead, or powdered gall-nuts, or calomel. When the ulcerated navel forms a kind of button with a narrow base, all that is necessary is to pass a ligature round it sufficiently tight to strangulate it. When this button has a broad base, the ligature cannot be applied; escarotics must therefore be used as in the first case. A pretty strong solution of nitrate of silver will answer very well.

Chapter XVII. Of Hydrocele. Chapter XVIII. Of

Umbilical Hernia. Chapter XIX. Of Inguinal Hernia. Chapter XX. Of Abscess of the Hip Joint. Dr. Dewees observes: "To Dr. Physick are we indebted for the proper mode of treating abscess of the hip joint. It was he who first suggested constant purging, and entire rest, and to which this formidable disease so often yields, when employed under proper circumstances," The plan recommended by Dr. Physick, is thus described by Dr. Dewees.

"The child must abstain from all animal food or broths; he must be laid prostrate upon his bed or mattress, and this without exercising the limb, but as little as possible; he must be bled freely from the arm if the pulse be active, or leeched upon the hip, if the bleeding be not indicated; these must be repeated in proportion to pain, or fever; if either come on. The bowels must be purged daily, or every other day, by the exhibition of cremor-tartar and jalap, in doses suited to the age of the patient, and this persevered in, until amendment is obvious, or the cure completed. Under this apparently weakening plan, it is astonishing sometimes to see how health and strength improve. Where it is impossible to confine the patient, much advantage is found from the curved splint, made to fit the hip and thigh. The ingenious Mr. William Rush (ship-carver) was very successful in adapting the splint to the shape of the parts concerned. To show how easily, and commonly, this case is mistaken for rheumatism, we will relate one case, of several of similar kind. In June 1823, we were requested to visit Miss ———, aged fourteen; she was from the country; she was there treated for a rheumatism in the knee, by stimulating, and other applications, for some time. At the request of a relation residing in the city, she was brought down for farther advice. We soon discovered the complaint to be a hip disease; and we wrote a letter of instructions for its treatment. After our taking leave, it was agreed she should remain in town to put the proposed plan in execution, and she accordingly commenced forthwith, and this with as much perseverance as success. She was bled and leeched twice; purged every day, or every other day at farthest, with jalap and cremor-tartar; confined closely to her bed; and observed the most abstemious diet, for two months; at the end of which time, we had the pleasure to return her to her anxious parent perfectly restored; and up to this time remains well."

In the *Chapters XXI.—XXII.—XXIII.—XXIV.*—the author treats of, *Abscess within the Ear; Of Adhesion of the Labia Pudendi; Of the Diabetes of Children; and Of Incontinence of Urine.* On each of these subjects the author makes judicious pathological and practical observations.

Chapter XXV. Of Constipation. Chapter XXVI. Of Vomiting. Vomiting in very young children is not always to be considered as a disease. Dr. D. divides the vomiting of infants into idiopathic, or spontaneous and sympathetic, or provoked.

He calls that idiopathic vomiting, when the contents of suckling infants are thrown up in consequence of the stomach having been "compelled to receive too much; the distention becomes a source of irritation, and the act of vomiting is produced." Aliquando bonus Homerus domitat.—The Dr. has said that *idiopathic* is spontaneous, and *sympathetic, provoked* vomiting. What can we call that vomiting which is excited by the irritation of over distention? Is this not *provoked* vomiting? Why then call it idiopathic or spontaneous, in contradistinction to "*provoked?*" The error is manifest, but it is of no practical consequence. This kind of vomiting is not to be considered as of any serious consequence.

When the vomiting occurs from a primary affection, situated remotely from the stomach, it amounts to disease, and requires remediate interference. Certain fevers, affections of the head, kidneys, neck of the bladder, liver, and intestines, are among the most common causes of sympathetic vomiting. The management of vomitings of this kind must of course depend almost entirely in the treatment of the original affection.

Chapter XXVII. Of Diarrhœa. In relation to the diet proper in diarrhœa, Dr. Dewees, very properly objects to the declaration of Dr. Cheyne, that, "an animal diet produces less irritation, than one which is solely composed of vegetable matter." Quite the contrary is unquestionably the case. There is perhaps in the majority of instances of this disease,

a phlogosed state of the mucous membrane of the intestinal canal; or at least a high state of irritation, approaching to the inflamed condition; in this state, reason and experience declare against the use of animal food. The more soothing and unirritating the diet, the better will it be adapted to the disease. "Reduced milk, rennet whey, gum arabic water, thin sago, tapioca, or arrow-root," says Dr. Dewees, "are much more proper in all the complaints of the bowels, than any animal juice, however much diluted." We agree fully also with our author, in the opinion he expresses, "that during the acute form of the disease where purging is necessary, where there is pain, and fever, the less the child takes into the stomach the better. The only proper thing at such times, is a little of the mother's milk, if the child be not weaned, or the occasional use of thin gum arabic water."

Where there is much nausea, Dr. Dewees advises small doses of calomel both with a view to its emetic and aperient effects. "Calomel in proper doses," says he, "is the best possible remedy where we wish to cleanse the stomach; for it is almost as certain to cause puking, where there is nausea in this disease, as a medicine *professedly* (?) emetic, without the inconvenience of the latter remedy. The calomel in such cases had always better be given in divided doses—say, the full dose divided into three parts, and a portion of it given every hour, until its intended effects are produced."

After the stomach and bowels have been cleansed by appropriate remedies, we have always derived the greatest advantage in this complaint, from very minute doses of calomel, ipecacuanha, and prepared chalk. The one-eighth of a grain of calomel, with a quarter of a grain of ipecacuanha, and three grains of prepared chalk, should be given every two or three hours, according to the urgency of the case. Dr. D. very correctly observes:

"We may remark, before we go farther, since the position is of constant application, that it is not a matter of indifference

what substance we use as a cathartic in any one species of diarrhœa; for success will very often depend upon the proper choice. Thus, neither castor oil nor rhubarb, would be so effectual as magnesia, in that diarrhœa in which the fæces had a predominating acid in them; nor would magnesia be so successful as either castor oil, or rhubarb, where there was an absence of acidity, as it requires a combination, to a greater or lesser extent, with such a substance, to render it efficient.

"It may be proper further to remark, that during the operation of medicine, very little food should be given the child; and never, any of a solid kind."

Lienteric Diarrhœa. This variety of diarrhœa comes on during the chronic state of ordinary diarrhœa. At first some one article of diet only, is observed to pass the bowels in an undigested state, as "potato, apple, or other vegetable substance." This is soon followed by the passage of other articles of food in an unchanged state; and finally, "every thing almost that enters the stomach is speedily conveyed through the intestines, with little or no appearance of having been acted upon by the powers of the stomach." The appetite is almost always voracious, and the thirst is considerable.

An interesting case is related by our author, which as it gives a full view of his plan of treating this disease, we shall quote at length.

"The daughter of L. A. aged ten months, had a pretty serious attack of billious diarrhœa, in consequence of her teeth passing with difficulty through the gums. She was however relieved of this, by small doses of calomel, the occasional use of laudanum, and by cutting her gums. Being an only child, and a great pet, especially, with two or three aunts, who were doomed to "single blessedness," she was too early indulged in improper articles of food, though she was ordered to be confined to the milk of her mother. She was permitted to taste of every thing she craved, though several of these articles were observed to pass the bowels unchanged—among these were portions of Irish, and sweet potatoes, and raisins. This gave no alarm to the loving aunts, or to the inexperienced mother; and she was permitted for a while longer to gratify her capricious desires, until the stomach lost controul over every thing received in it; and of course its contents were

transported through the bowels unchanged. We were now again sent for.

"There was neither nausea, nor vomiting in this case; but the thirst was great; the urine small in quantity: high coloured; and of a very strong smell. The child began to fall away, and its strength to decline rapidly. We ordered that no kind of food whatever should be given, save that of the milk of the mother, and that only once in four hours, and then not in full quantity. Should the thirst require more fluid than the milk, to satisfy it, by giving from time to time a tea-spoonful of cold water. To put woollen stockings on its legs; flannel it was already wearing on its body. To have the abdomen rubbed three or four times a-day, for ten minutes at a time, with the bare warm hand. To not awake the child when asleep, under any pretence whatever; to have her taken across the river in the steam boat two or three times in the afternoon, when the weather was suitable.

"In addition to this, she was to take four drops of chalybeate wine, and a quarter drop of laudanum every two hours, in a few drops of sweetened water, when awake. This plan was pursued for two or three days before any change was perceived; but at the end of this time it was observed, that the food remained rather longer in the stomach after nursing, though the milk seemed to pass off unchanged, with some small tinges of brighter yellow than before.

"Thinking advantage might be derived from stimulating the external surface of the abdomen more powerfully than by the frictions of the hand, we ordered the tartar emetic ointment in the proportion of a dram of the tartrite, to an ounce of simple cerate; a portion of this to be applied once a-day over the whole surface. The quantity of laudanum was increased to half a drop, every two hours; the nursing, drink, and exercise as before.

"At the expiration of three more days, the discharges from the bowels were less frequent, the milk was perceived to be slightly curdled;* the bile more evident, the urine rather more abundant, and the skin of a more uniform and natural warmth. The ointment had produced no effect upon the skin; it was ordered to be rubbed twice a-day—no more nourishment, and the same drink.

"At the end of three more days the stools had become less frequent; they bore evident marks of digestion, and were

* In some cases, there appears to be an excess of acid; and the milk passes through in the form of whey and coagulum.

assuming a more decided tone of yellow. The skin was beginning to show signs of irritation; the ointment continued; the laudanum increased to three-fourths of a drop; the nursing, drink, and exercise, to be continued as before.

"At the expiration of another period of three days, we found every thing much changed for the better—had had but two evacuations for the last twenty-four hours—digestion much more decided; stronger evidences of bile; the urine much freer, lighter coloured, and less rank in smell. The skin of the abdomen pretty much irritated. The laudanum was not increased; the nursing was permitted to be a little more in quantity, but not oftener; the water was sweetened now with a little loaf sugar, as the thirst was considerably abated.

"Another interval of three days had passed. One stool only per diem, but it was large; some portions of white curd mixed with the new yellow fæces—fæces pretty offensive; urine sufficiently abundant; the abdomen much irritated; the skin and pulse natural. It may be well to observe, that the pulse was little or not at all affected during the whole time, on which account we did not notice it hitherto in our reports.

"As the mother's milk was sufficient in quantity, as well as good in quality, we ordered the child to be exclusively confined to it—but that it might be nursed rather more frequently; to permit the vesications on the abdomen to heal gradually; to continue the laudanum, but much less frequently, say, three or four times a-day; and should the bowels now become rather confined, of which of course there was a risk, to have them opened by an injection of molasses and water.

"The child was now ordered to the country, from which it returned in about three weeks, in perfect health."

Chapter XXVIII. Of Cholera Infantum. The description given of this disease, by Dr. Dewees, appears to us to be more accurate than any we remember to have seen. Upon the whole, however, there is nothing suggested either in relation to the cause or mode of treatment, which is novel, and we shall not therefore stop to give any particular account of this chapter.

Chapter XXIX. Of Pertussis. Dr. Dewees thinks that whooping cough "depends on causes of a more general and pervading influence than contagion."

"That it does in some instances arise from other causes than contagion, seems quite certain. Willis, who was the first to describe it, declares it to be an epidemic, occurring most commonly in spring, and autumn. By Hoffmann, it is said to have spread in Berlin to a great extent, in the same way. In the tenth volume of the Medical Repository of New-York, Dr. Willey gives an account of the disease having suddenly broken out in Block Island, and where it prevailed widely, without the inhabitants of the place having had any intercourse with an infected source. It is a rule, with few or no exceptions, that, where a disease can be traced to atmospherical influence, it does not prove contagious. Nature, indeed, can hardly employ two such opposite causes to produce the same effect.*

Bleeding is one of the most important remediate means when there is considerable febrile excitement. In some instances it becomes necessary to repeat this evacuation three or four times in the course of a week, before the inflammatory action can be sufficiently subdued. Emetics are universally employed. Dr. Dewees regards Coxe's Hive Syrup as decidedly the best article to produce vomiting in this disease.† Calomel is the best laxative we can employ. Dr. Dewees thinks that the duration of this disease may be as certainly abridged by proper remediate treatment, as any other febrile disease; and in this, we perfectly agree with him. Dr. Dewees does not mention Belladonna, in this disease. On the continent of Europe, this article is considered

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* It is a well known fact, that many become affected, where every precaution is taken to avoid contagion; and that the disease is uniformly relieved, or even cured, by a removal beyond the limits of the supposed distempered atmosphere.

† The following is the recipe for making the compound syrup of squills, or Coxe's hive syrup. Take of

Seneca snake root bruised } each half a pound.
Squills dried and bruised }
Water - - - - eight pounds.

Boil together over a slow fire till the water is half consumed; strain off the liquor, and then add of strained honey four pints.

Boil the honey and the strained liquor to six pounds, or to the consistence of a syrup; and to every pound of the syrup, add sixteen grains of tartar emetic, that is, one grain to every ounce.

as almost a specific in whooping cough. Borda speaks of it in terms of unlimited praise. Children, says he, to all appearance past recovery, have been saved by means of this remedy. Hufeland, Schæffer, and Marc, speak of it in similar terms of praise, and Alibert states, that in France a similar success has attended the employment of this remedy. We have ourselves prescribed it in this disease, and although we did not derive any very decisive advantages from it, we had sufficient evidence that its influence tends to oppose the disease.

The remaining portion of this work is devoted to the consideration of cynanche tonsillaris; cynanche trachealis; worms; scarlatina; measles; urticaria; burns; prolapsus ani; whitlow; discharges from the vagina, and scurfiness of the head.

ART. V.—*Medical Researches on the Effects of Iodine, in Bronchocele, Paralysis, Chorea, Scrophula, Fistula Lacrymalis, Deafness, Dysphagia, White Swelling, and Distortions of the Spine.* By ALEXANDER MANSON, M. D., Physician to the General Hospital, and St. Mary's Hospital and Dispensary, Nottingham. London. 1825.

A WRITER never pays so high a compliment to the understanding of his readers, nor expresses so unreserved a confidence in the value of what he communicates, as when he presents without comment, a body of well arranged facts, not the culled props of an hypothesis, nor the fortuitous aggregation of unmeaning data. The tacit preface which every reader supplies to such a book, informs him that he is to draw his own inferences, and in proportion to the importance of the results, to attach value to the premises on which they are grounded. The volume which we are about to examine, is of this character, and the object of it is to determine the precise value of an exceedingly interesting therapeutic agent, which chemistry has recently added to the pharmacopœia.

Like most new remedies, iodine has undoubtedly been by

some extolled above its real merits; the proofs of its efficacy, however, are already sufficiently numerous to render it one of the most important articles of the materia medica.

The information which we possess in relation to its powers, is as yet scarcely any thing more than empyrical. Its influence over certain diseases, has been determined by experiment, but we are not yet able to ascertain its modus operandi, nor with certainty, the set of organs to which its effects are particularly determined, and consequently cannot refer it to its proper class. At present we must content ourselves with observing its effects in the variety of diseases, in which it may be employed, and of which some common character or trait, may lead us to a more determinate idea of its remedial nature. This, indeed, is the order of inquiry which has lead to what scientific information we have of the character and powers of almost every article of the materia medica.

While there prevailed a belief in specifics, corresponding to each individual disease, the empyrical use of remedies existed in the same degree; in consequence of which almost every substance in nature, and particularly such as possessed any remarkable sensible properties, was successively tested as a medical agent. It is almost impossible to name an article that exists naturally, which was not employed, and for a variety of diseases. The medicinal virtues of many of the most valuable articles were thus fortuitously ascertained, and their modus operandi afterwards determined upon physiological principles. At the present day, as we possess so great a variety of agents, adequate to answer nearly all the indications which we may hope ever to fulfil, and as the idea of natural specifics has been long ago abandoned, it would be altogether unwarrantable to experiment upon the sick with those articles which may yet remain untried, unless there should exist some analogy, or other circumstance, which may suggest their use. We find that the medicinal agents are naturally divided into classes, the individuals of each of which have a similar influence upon the human system.

The probability is, that we already possess articles of each one of these classes, and which respond to all the general indications which can ever be answered by medicinal agents. It is in vain to think of developing any remedy which shall operate in a way or degree materially different from some of those which we now possess. All that we can rationally hope to accomplish in this way, is to add to the present list, articles which may answer more completely indications that we are able already in a measure to fulfil, or the qualified effects of which may better adapt them to particular cases.

The medicinal properties of iodine, were first employed in the burnt sponge, although it was not then known to exist in it. Perhaps the disgusting taste of this article first recommended it to the empyrical practitioners. The medicinal effects of the sponge, were so decided, that although regarded as a nostrum, and rejected from many of the pharmacopœias, it maintained a great reputation with the vulgar, and was even used by many of the faculty, though most regarded its medical virtues as attributable to the alkali which the article contained, and preferred the use of that article in a more scientific form, but by no means with an equal degree of success. It has since been ascertained, that iodine, which exists in many marine productions, confers upon the burnt sponge its active properties. The chemical character and relations of this exceedingly interesting substance, it is not our province to detail; they are to be found in the books of chemistry. To acquaint our readers with its medicinal virtues, we propose to quote cases, of which the book under consideration is made up, of every variety of disease in which it was employed by the author. These will illustrate its effects in bronchocele paralysis, chorea, scrophula, fistula lachrymalis, deafness, dysphagia, white-swelling, morbus coxarius, curved spine.

The cases are of unquestionable authority, being derived from a respectable source, and recorded with all those circumstances which confirm the authenticity of reports of this kind.

The following extract will acquaint our readers with the form employed by the author:

"At my request, Mr. Thompson (at that time the Apothecary of the General Hospital, near Nottingham,) procured some iodine, one dram of which was dissolved in two ounces and a-half of the rectified spirit,* supplied to the hospital, being exactly double the quantity of spirit employed by Dr. Coindet, consequently, one drop of his tincture is exactly equal to two drops of the tincture used by myself. I was compelled to use a tincture of a different strength from that of the ingenious physician of Geneva, as the rectified spirit of the hospital would not dissolve the iodine in the proportion which he employs, and I found double the quantity of rectified spirit added in portions, and assisted by trituration, only sufficient to dissolve and keep permanently suspended the quantity of iodine he has directed. This tincture I have employed for the last three years, and I have never found any deposition of iodine, or change in the sensible qualities of the tincture to take place, an occurrence which is reported to have happened tot he tincture employed by Dr. Coindet, and others, who have imitated him.

"Case I.—Hannah Wollatt, æt. sixteen, frame-work knitter, Hucknall, admitted as an out-patient of the Nottingham General Hospital, the 6th of March, 1821. Labours under bronchocele of considerable size, that presses on the trachea so much as to occasion shortness of breath and wheezing. It is three years since the gland first began to enlarge. Has not yet menstruated. Complexion florid. Lips thick. Her aunt labours under bronchocele, or, as she calls it, a thick neck.

"Capiat Pil. Aloes cum Myrra gr. x. h. s. si tarda est alvus.

"℞. Pulv. Sodæ Carbon. et Pulv. Tragacæ. C. āā. ℥ss. Misce et divide in Pulv. xx. Capiat i. ter in die ex aqua.

"*March 9th.* Is nearly in the same state. Pills move her once in twenty-four hours. Contr. Remed.

"*March 16th.* There is no change in the tumour, and her breathing is no better. Pills keep the body open, appetite good. P. 84 and soft. Sk. cool. T. clean. Catamenia have not yet appeared. Omittr. Pulveres.

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* Specific gravity .916.

"Contr. Pil. Aloes cum. Myrrha h. s. pro re nata. Sumat Tæ. Iodini gutt. x. ter in die ex aquæ cyatho vinario.

"*March* 23*d*. The tumour is considerably smaller and softer. Breathing improved and wheezes less. Has had three or four loose motions daily. Contr. Pilæ. Aper. si opus sit. Capt. Tæ. Iodini gutt. xv. ter in die.

"*March* 30*th*. Breathing not affected unless she walks fast. No wheezing now. The tumour is about half the original size and quite soft. Has three stools in twenty-four hours. Appetite very good. Drops occasion no sickness or inconvenience. Capiat Tæ. Iodini gutt. xx. ter in die. Contr. Pil. Aloes cum Myrrha p. r. n.

"*April* 13*th*. Much better. Contr. Remed.

"*April* 27*th*. The tumour is not quite dissipated. Drops agree. Contr. Remed.

"*June* 15*th*. Has been from home for the last fortnight, and has taken none of the medicines. Pergat in usu Medicamentorum.

"*July* 27*th*. The Bronchocele is quite gone. Breathing free, no wheezing. Has not yet menstruated. Says she feels quite well. Discharged cured.

"I beg leave to remark, that I was trying the effects of the carbonate of soda in this case, with a view to ascertain the efficient matter in burnt sponge, when Dr. Coindet's discovery of iodine being the active ingredient in burnt sponge was announced to the medical world to my great joy and satisfaction. I lost no time in getting a supply of the iodine, and the above case led me to believe that it possessed great remedial powers in the cure of Goitre.

"Case II.—Ruth Meakin, æt. nine, from Newthorpe, admitted an out-patient of the General Hospital, on the 27th of March, 1821. The thyroid gland is prodigiously enlarged, being nearly as thick as her neck: it has been three or four years in attaining its present size. On the left side are three enlarged conglobate glands resting on the surface of the tumour. Does not experience any inconvenience in her breathing from the tumour. Her father and three other children labour under bronchocele. Her mother and five children are perfectly free from the disease. The children have all been brought up together in the same house. General health, good. Bowels, regular. Sumat Tæ. Iodini, gutt. x. ter in die ex aqua.

"*April* 6*th*. Bronchocele no smaller or softer. Conglobate

glands in the same state. B. regular. Capiat Tæ. Iodini gutt. xv. ter in die ex aqua.

"*April* 13*th*. Tumour said to have diminished half an inch last week. Contr. remed.

"*June* 15*th*. Has taken fifteen drops of the tincture three times a-day regularly. The neck and tumour measures two inches less than when she was admitted. The Conglobate glands have also diminished more, in proportion, than the Goitre. B. open. Tongue, clean. Capiat Tæ. Iodini gutt. xx. ter in die.

"*June* 29*th*. The tumours continue to subside. Has lost the tape with which the neck was measured. No sickness or inconvenience from the tincture. Contr. remed.

"*July* 13*th*. The left lobe is almost dissipated, the right one is still of considerable size, and rather hard. Conglobate glands continue to diminish in size. Neck measures two and a-half inches less. Contr. remed.

"*August* 3*d*. Tumour diminished a-quarter of an inch since last report. Sumat Tæ. Iodini gutt. xxv. ter in die.

"*August* 17*th*. Reported improving. Contr. remed.

"*August* 24*th*. Bronchocele not reduced in size since last report. The Conglobate glands have subsided so as not to deserve further notice. Capiat Tæ. Iodini gutt. xxx. ter in die.

"*September* 7*th*. The Bronchocele is nearly half an inch less, by measure, than on the 24th ult. B. open. Contr. remed.

"*September* 28*th*. The tumour exactly of the same size as on the 7th inst. but is rather softer. Capiat Magnes. Sulph. ℥ij omni mane et Tæ. Iodini gutt: xxxv. ter in die.

"*November* 10*th*. Discharged for non-attendance.

"*November* 23*d*. Came to the Hospital this day to return thanks. There is still a greater degree of fulness in the right side of the gland than natural, but it is soft to the touch. Has passed 15 *lumbrici* since the 28th of Sept. last. Discharged cured."

"Case IV.—Miss N. æt. twenty. May 15, 1821. Born and brought up in Nottingham. Is of a florid complexion, brown hair, rather stout made. Has had a certain degree of Bronchocele for seven years; it continues gradually to increase in size, and is hard to the touch. About seven years ago, had a scrofulous ulcer in the left instep, that continued open and discharged for about four years. After the Catamenial discharge took place, the ulcer healed, but the foot generally, and particularly the instep, remains much larger and fuller

than the other, so that she is obliged to have a shoe made on purpose to fit it, although the ulcer has been healed for three or four years. Has also laboured under a considerable degree of deafness for ten or twelve years, which occasions her to have a vacant look. Is in tolerable health for a person who is almost constantly in the house. Catamenia regular. Bowels only moved twice or thrice in a week.

"℞. Pil. Cambogiæ Comp. ʒi. forma in Pilulas xij. quarum sumant duas omni nocte h. s.

"℞. Tæ. Iodini ℥ss. capiat gutt. xv. ter in die ex aquæ cyatho vinario.

"*May* 16*th*. The drops last evening made her sick, and she afterwards felt very cold. Bowels costive. Has not taken the pills. Pulse 84, and of moderate strength. Statim capiat Pil. Cambogiæ, C. gr. x. et post alvi solutionem sumat Tæ. Iodini guttas x. ter in die ex aqua.

"*May* 19*th*. Tumour softer, and thinks she can move her head more freely. Contr. Pil. aper. et Tæ. Iodini.

"*May* 23*d*. Goitre smaller and a great deal softer. Her foot smaller, and not so puffy. Drops agree. B. regular. Contr. Pil. Cambogiæ. Comp. p. r. n. Sumat Tæ. Iodini gutt xv. ter in die.

"*May* 26*th*. The Bronchocele continues to diminish in size, and is much softer. The left foot also continues gradually to subside, and she can move her toes much better. Contr. Pilul. Cambogiæ. C. p. r. n. Sumat Tæ. Iodini gutt. xx. ter in die ex aqua.

"*May* 31*st*. The foot measures one inch less at the instep than it did previous to her taking the Iodine. The skin is loose and in wrinkles, from the speedy reduction in size, and the parts are much softer. The Bronchocele is also much smaller and softer, but, as the measure has been lost, I cannot ascertain the exact diminution. Contr. remed.

"*June* 5*th*. Continues to improve. Contr. remed.

"*June* 7*th*. Bronchocele has diminished three-quarters of an inch since the 31st of May. Foot no smaller since that time. Contr. remed.

"*June* 18*th*. Her neck, including the tumour, measures one inch less than on the 31st of May, and the instep also measures a-quarter of an inch less since that time. Contr. Tæ. Iodini et Pilul. Cambogiæ. Comp.

"*July* 7*th*. I have seen the patient occasionally since the last report, without making any notes or alteration in the treatment. The thyroid gland is now very little larger than natural, and her foot is so much reduced that she can wear

shoes that are fellows, which she has not been able to do for the last seven years.

"*July* 14*th*. There is merely a perceptible fulness of the throat, but it is quite soft, and gives no inconvenience whatever. The feet are now nearly of a size, and she wears shoes of the same dimensions without inconvenience. A most important feature in this case has almost passed without notice —the patient's *hearing* has been restored in nearly a *perfect* degree.*—Discharged cured."

Other cases, to the number of fifteen, and equally decisive, are recorded. This chapter is continued with a tabular view of the author's hospital and private practice, of which we give only the following abstract:

GENERAL ABSTRACT.

Total number of Cases - - - -			120
From these deduct four Females twice admitted -			4
Number of Individual Cases - -			116
Viz. *Males*—— Cured	10		
Ditto much relieved -	1		
Ditto discharged for non-attendance -	1		
Ditto improving under treatment - -	3	——Men, Total 15	
Females—— cured -	66		
Ditto much relieved -	9		
Ditto without relief -	2		
Ditto discharged for non-attendance -	10		
Ditto improving under treatment - -	14	—Women, Total 101	
Number of Individual Cases as stated above			116

The author concludes the history of the above, by a few remarks on the individual cases, and some general observations on the effects of the remedy.

* I have pleasure to remark that Miss N. continued in perfect health, and without any relapse, up to the 3d of March, 1824, when I last saw her.

He has never witnessed any injury to the constitution from the long continued use of the article, nor any alarming immediate effects from overdose; on the other hand the medicine was observed to have a tonic and invigorating effect, and patients under its use felt themselves in better health and spirits than for years previous. In some individuals, he observes, that the medicine, after having been given for some time, excited head-ache, nausea, giddiness, and languor. A reduction of the dose at once obviated all these unpleasant effects. In one instance a young woman took by mistake an ounce of the tinct. which produced no other effect than to excite immediate vomiting, by which it was rejected. The following remarks are valuable.

"The power of Iodine over the absorbent system, has been noticed by Dr. Coindet, and others: it early attracted my attention, as will be seen by referring to the Remarks, No. 18; since that time, as will afterwards appear, I have had ample proof of its great power over the lymphatic system; but, I am of opinion, that it exerts no peculiar or specific power over that system of vessels and glands, but that they only participate in its general energetic effects on the whole body."

Chapter II, is made up of cases of Paralysis treated with this remedy. The pathological principle which governs its employment is set forth in the following paragraphs:

"The different species of palsy occur so frequently, and, in the great majority of cases, are so difficult to cure, that any new remedy that can effect so desirable an object, or even relieve a portion of the unfortunate individuals who labour under so severe an affliction, will, I flatter myself, be acceptable to the medical world; for, notwithstanding the great attention that has of late years been given to the pathology of palsy, and although various new remedies have been employed and recommended by ingenious men for its cure, still we must admit the melancholy fact, that palsy generally proves an obstinate an untractable disease, too often baffling all our plans, and resisting our most potent remedies.

"It was want of success with the remedies usually employ-

ed, in much slighter cases of palsy than the deplorable one I am about to detail, that led me to try a new method of curing the disease.

"The wonderful powers of Iodine, which I had recently witnessed, and a long previous acquaintance with the effects of the same remedy, as it exists in burnt sponge, in reducing morbid enlargements of the thyroid gland, led me, from analogy, to think, that in cases of palsy, from tumours, or fluids, pressing on the brain, or spinal cord, or from morbid thickening of the investing membrane of the cord itself, Iodine might prove a useful remedy, not only by stimulating the nervous system, and removing morbid tumefaction and effusion, but also by correcting the strumous state of the constitution that often gives rise to the disease."

"Case I.—James Watterton, æt. nineteen, was admitted an in-patient of the General Hospital, near Nottingham, on the 27th of March, 1821. Has been ailing since October, 1819. Says that he was first attacked with pain in the bowels, and griping. After some time the pain left the bowels, and the lower extremities became swelled and painful. His mother put his feet and legs in warm water, and after this, his neck became stiff and painful, and he soon began to be troubled with pains shooting from the neck into the left side of the head (this took place, he thinks, about nine months ago;) after the pain had continued for three months, it left him, and has not since returned. Almost immediately on the pain leaving him he lost the power of moving the left arm, and in a short time after the lower extremity of the same side became paralytic. Some time after this, he recovered the use of the left arm in a considerable degree, the lower extremity of the same side remaining paralytic, and the right half of the body, as high as the neck, was seized instantaneously with complete palsy. He has continued ever since in this wretched state, and has been getting worse, he thinks, instead of better, and passes his stools and urine involuntarily. Is pale, and of a slender spare habit. He lies in bed on his back, and is completely palsied on both sides, from the neck downwards, with the exception of the left upper extremity, over which he still has so much power as to be able to raise his hand as high as his chin, but he cannot grasp any thing with that hand. The sense of feeling is very much impaired, but not quite obliterated in the paralytic parts. There is no distortion of the face, and the patient can articulate very well. Is troubled with twitchings in the lower extremities.

"*March* 28*th*. Complains of head-ache. Bowels not moved for two days. Sumat Mist. Purgantis ℥iiss quam primum.

"*March* 29*th*. Remains quite helpless. Bowels moved yesterday by the purging mixture, feels better since, and has had a good night. Skin cool. Pulse small and weak. Bowels open. Capiat Miss. Purg. ℥iss cras primo mane. Applicetur Emp. Lyttæ parti cervicis posteriori, h. s.

"*April* 2. Blister acted pretty well: for three days the blistered part has been dressed with an ointment having a proportion of blistering plaster mixed with it, and the discharge is copious. Thinks he has rather more command over the left arm, but the other limbs are not better in any degree. Appetite moderate. It appears that the patient had a bloody purulent discharge from both ears, about two years ago, unattended with pain; the left ear continues to discharge a purulent looking matter; the right has not discharged any thing for some time. Contr. Mist. Purgans.

"*April* 4*th*. Continues nearly in the same state. The incontinence of urine has existed, without any improvement, since both the lower extremities became paralytic. Bowels are kept regular by the purging mixture. Pulse 84, and soft. Skin cool.

"Repetatur Mistura Purgans pro re nata Habeat Tincturæ Iodini gutt. x. ter in die ex cyatho vinario aquæ.

"*April* 6*th*. Begins to move the right arm a little, and feels better.

"Continuetur Mist. Purg. p. r. n. Sumat Tæ. Iodini gutt. xv. ter in die ex aqua.

"*April* 9*th*. Blister almost healed—to be dressed with issue ointment. Can raise the right hand nearly to the head. The power of moving the lower limbs has not improved, but the twitchings have nearly ceased, which shows some increase of muscular power. Pulse 80, and of better strength. When placed in the sitting posture in bed, can support himself better than when admitted. Bowels regular.

"Repetatur Mist. Purg. p. r. n. Habeat Tincturæ Iodini gutt. xx. ter in die ex aqua.

"*April* 10*th*. The blister has healed, and the issue ointment was not re-applied. It may be omitted. This morning first recovered the use of the lower extremities, so as to be able to move them a little, and can bend the left leg a little upon the thigh. Has more power over the left arm, and moves it about with greater freedom. Feels stronger and better. Can hold his urine now so as not to wet the bed.

"Continuentur remedia.

"*April* 14*th*. Continues to improve. On the night of the 10th instant, began to have a considerable degree of pain in the toes of the left foot, shooting towards the heel. The left lower extremity is often spasmodically drawn up towards the body, and the foot is now so exquisitely sensible, that the friction of the toes against the bed clothes is quite insupportable; so that I find him with the foot, and part of the leg, quite uncovered. The pain has broken his rest during the night, since the 10th instant. Can now raise the left hand above his head, and move it about in all directions. Has not made the same degree of improvement on the right side of the body. Takes the purging mixture every second day. Pulse 84, and rather firmer.

"Sumat Mist. Purgantis, ℥iss. alternis matutinis. Capiat Tæ. Iodini gutt. xxv. ter in die.

"*April* 16*th*. The paralytic symptoms continue to yield to the powerful influence of the Iodine. When his meat is cut he can feed himself with the left hand. Can raise the right hand to the chin, and can draw the right lower extremity up towards the body, and raise it about two inches from the bed. Says that his limbs are stiff from not being exercised—he is directed to move them as much as he can. He continues to hold his water. The perinæum and nates are raw from the former dribbling of the urine. Bowels were rather tardy—has taken a dose of the purging mixture this morning.

"Capiat Tæ. Iodini gutt. xxx. ter in die. Repetatur Mistura Purgans, p. r. n. Fricetur Perinæum Linimento Camphoræ bis in dies. Utatur Pediluvio omni nocte, h. s.

"*April* 18*th*. Continues to recover. Has less pain in the left foot. The left ear continues to discharge a little purulent matter. Pulse 84, and rather stronger. Appetite good. Bowels regular.

"Continuentur remedia.

"*April* 21*st*. Is not so well. Complains of head-ache; there is a purulent discharge from both ears. Cannot move the right arm so well as he could two days ago. Pulse 96. Ears to be injected daily with tepid water.

"Intermittatur Tinctura Iodini. Cras primo mane capiat Mist. Purg. ℥iss.

"*April* 23*d*. The purulent discharge from the ears continues. Head-ache gone. Face flushed. Can move the right arm better than on the 21st of April. Pulse 88, and firmer than on the 18th.

"Sumat Tæ. Iodini gutt. xxx. ter in die et Mist. Purg. ℥iss. alternis matutinis.

"*April* 26*th.* Head-ache became more severe yesterday, and it continues. Pulse 100, and firm. Eyes a little inflamed. Bowels open. Less discharge from the ears. Paralytic symptoms, as on the 23d instant.

"Intermittatur Tinctura Iodini. Continuetur Linimentum Camphoræ. Capiat Mist. Purg. ℥i. omni mane. Imponatur Emplastrum Lyttæ parti cervicis posteriori.

"*April* 28*th.* Blister rose well. Head-ache is relieved. Less discharge from the ear. Complains of an aching pain in the left eye. Cannot use the right arm so well as he lately could. The other extremities are in the same state they were a week ago. Bowels open by the purging mixture. A little strangury yesterday, from the blister. Pulse 96, and soft.

"Capiat Mist. Purg. ℥i. omni mane et Tinct. Iodini gutt. xv. ter in die ex aqua.

"*April* 30*th.* Can move the right arm better since last report. Blister has discharged freely—it is nearly healed. The left eye is slightly inflamed and painful. Pulse 88, and soft. Bowels open.

"Continuentur remedia. Applicentur hirudines quatuor palpebris sinistris.

"*May* 1*st.* The wounds made by the leeches bled profusely. The inflammation is almost gone, and has very little pain in the eye. Can move the right arm better than he has hitherto done. Bowels very open by the purging mixture. Pulse 80, and soft.

"Continuentur medicamenta.

"*May* 3*d.* Blister healed yesterday. Better, and can raise the right hand as high as the crown of the head. Gets up from his chair without assistance, and can stand holding by a table. Is free from pain in the eye and head-ache. Very little discharge from the ears. Bowels open.

"Continuentur remedia.

"*May* 5*th.* Has more power over the right arm and hand, and can bend and extend the right leg on the thigh, better than heretofore. Yesterday, supported by two men, he walked from his bed-room to the day ward. The left ear discharges a little purulent matter. Appetite good. Feels stronger. Bowels open to-day, but costive yesterday, having omitted the purgative. Pulse 76, moderately full, and soft. The left eye is slightly inflamed, but says he has no pain in it. Sleeps well.

"Repetatur Mist. Purg. p. r. n. Capiat Tæ. Iodini gutt. xv. ter in die.

"*May 7th.* Walks from his bed-room to the day ward, with very little assistance. Moves the right arm much better. Left eye a little inflamed. Some dulness, and specks in the cornea for eight years.

"Continuentur remedia. Applicentur hirudines duæ palpebris sinistris.

"*May 9th.* Continues to improve. Bowels open. The excoriations have healed. His skin being harsh, and rather dry, he is rubbed with the Linimentum Camphoræ.

"Continuentur Mist. Purg. Capiat Tæ. Iodini gutt. xx. ter in die.

"*May 12th.* Says he can walk a great deal better this morning. No discharge from the ears. Bowels only moved when he takes the purging mixture.

"Continuentur medicamenta.

"*May 19th.* Continues gradually to improve: this morning he walks without any assistance; but a person attends to prevent him from falling, should he lose his balance. He also continues to recover the use of his arms. The left ear discharges a little. Bowels open by art.

"Sumat Tincturæ Iodini gutt. xxv. ter in die.

"*May 21st.* I find him walking with the assistance of a stick to steady himself. Had four stools yesterday. Opacity of the cornea less, and vision considerably improved. No head-ache. Left ear discharges very little, and the offensive smell is gone. Pulse 80, and of moderate strength.

"Continuentur remedia.

"*June 2d.* Continues gradually to recover the use of all the extremities: the arms he can move in all directions; but complains of want of strength in the right one. The right knee is stiff, but he can bend the leg to nearly a right angle with the thigh. The sense of feeling, also, continues gradually to improve. Bowels not moved, unless by physic.

"Capiat Mist. Purg. ℥iss. omni mane et Tæ. Iodini gutt. xxx. ter in die. Omittatur Linimentum.

"*June 4th.* There is a little discharge from the left ear. Is gradually recovering.

"Continuentur remedia.

"*June 9th.* Can walk without a stick, or any one to prevent him from falling. He is gradually recovering the power of motion, and sense of feeling. Drops agree. Appetite good, and is now allowed full diet. A few days ago, I first observed a considerable degree of fulness in the upper and left side of the neck: the part sometimes aches for the space of a minute. Pulse 72, and soft.

"Continuentur Mist. Purg. et Tinct. Iodini.

"*June* 13*th*. Wrote his name with a pencil on the 11th instant. Had the misfortune to fall yesterday and hurt the right arm so much, that he cannot raise his hand to his head, on account of pain. Some head-ache last night, after the fall. Bowels open by the mixture. To use a sling to support the arm.

"Continuentur remedia. Applicentur hirudines tres partibus dolentibus.

"*June* 18*th*. I found him this morning walking before the Hospital. The leeches relieved the pain in the arm. Complains of stiffness and pain in the right shoulder joint, on motion. Does not now use a sling for the arm. Continues to recover.

"Continuentur remedia.

"*June* 23*d*. Cannot move the right arm quite so well as before the accident. For the last three days has been purged four or five times each day without taking the Purging Mixture. The medicines were omitted, and he has daily taken fifteen drops of Tincture of Opium to check the diarrhœa.

"Cras repetantur remedia ut antea.

"*June* 25*th*. Bowels regular. Can now walk better with the right than the left lower extremity. The right shoulder joint feels weak since the accident. There is still some swelling and stiffness in the upper and left side of the neck. Has very little discharge from the left ear, and his hearing is not impaired.

"Capiat T. Iodini gutt. xxx. ter in die et Mist. Purgantem p. r. n.

R. Linim. Saponis Camp.	-	℥ij.
Tinct. Opii. - -	-	℥ij.
Ol. Terebnithinæ Rect.	-	℥ss.

"Misce fiat Linimentum quo fricetur humerus affectus mane et hora somni.

"*June* 30*th*. Shoulder better. Continues to recover. Complains of being weak in the loins.

"Continuentur remedia.

"*July* 2*d*. Is gradually recovering flesh and strength. Has the complete use of all his limbs, and the sense of feeling is as perfect as ever. Can walk without a stick, but generally uses one. His right shoulder is nearly recovered from the effects of the contusion. Has written his name with pen and ink this morning, the paper is attached to the cover of the journal kept at the Hospital. There is still a little fulness, and at times aching in the left side of the neck. The left ear continues to discharge a serous fluid with whitish flakes in it;

but, it is free from any offensive smell. Bowels regular for the last week, without the use of Purging Medicine. Tongue clean. The speck has nearly disappeared, and he now can see better with the left eye than for the last eight years. He complains chiefly of weakness.

"*July 3d.* Discharged cured."

"Case V.—Jane Everett, æt. twenty-one, servant. Was admitted under my care as an In-patient at the General Hospital, the 10th of February, 1825. Ten weeks ago, hurt her loins by falling down a flight of fifteen steps; has had pain in the loins ever since, attended with numbness, and want of proper sense of feeling. Says that she has had hard work to get up to the Hospital, from Chesterfield Street, distant about the eighth part of a mile. Bowels have not been moved for five days. Urine turbid after standing. Catamenia regular. Her hands are subject to be cold, and of a purplish colour, and the lower extremities are swollen, and of a mottled purple colour, as if she had the measles. Coughs and expectorates a great deal of phlegm, generally with some streaks of blood. P. 92, and soft. T. furred. Is directed to use the Vapour Bath at 110 degrees, three times a week.

"Capiat Misturæ Purgantis ℥ij. omni mane.

"*February 14th.* I have examined the spine this morning, and can see nothing amiss. Feels better since she has used the Vapour Bath. Vomited the Purging Mixture, and has taken half an ounce of Epsom Salts instead of it. Labours under Bronchocele, but did not mention it to me before.

"Contr. remed.

"*February 16th.* Still complains of numbness, and impaired sense of feeling in the lower half of the body. P. 84, and soft. Skin cool. B. open by the Salts.

"Contr. remed. Sumat Liquoris Iodini gutt. x. ter in die ex aqua.

"*February 18th.* Says that the feeling has returned in a considerable degree, and that the lower extremities are now twitched, and have a prickling sensation in them; and when she first gets up in the morning, the soles of her feet feel as if she were treading on the points of needles or pins.

"Contr. remed.

"*February 27th.* Has recovered the feeling and perfect use of the lower extremities, and has been free from any tingling sensation in them for three days. She wishes to return home, but I have advised her to stay a little longer, lest she should relapse.

"Contr. remed.

"*March 3d.* Complains of some return of pain in the loins, and numbness in the lower limbs. B. open.

"Capiat Liq. Iodini gutt. xij. ter in die. Continuentur alia:

"*March 6th.* Pain in the loins almost gone, and has recovered the feeling of the lower extremities, and is without any prickling sensation. Bronchocele softer.

"Capt. Liq. Iodini gutt. xv. ter in die. Contr. alia.

"*March 22d.* Bronchocele smaller and softer. Can use the lower limbs very well now, but complains of some pain above the left hip, which has been troublesome for five or six days.

"Contr. remed. Applr. Emp. Cantharidis parti dolenti h. s.

"*March 27th.* Hip easier since blistered; has still a little weakness in the loins, but no numbness in the limbs.

"Contr. remed.

"*April 2d.* Says she feels quite well now, and has no pain or numbness.

"*April 17th.* No return of the paralytic symptoms. Bronchocele almost dissipated. Is going home to Rutlandshire, and is supplied with half an ounce of the Liq. Iodini, which she is desired to take as before.

"Discharged cured."

Chapter III. is made of cases of Chorea treated with iodine, of which we quote the following:

"Case I.—Anne Harrison, æt. twelve, lace-runner, of Nottingham, admitted an Out-Patient of the General Hospital, 11th June, 1822.—For three months has laboured under Chorea in the right side of the body, which is now in a severe degree; articulates very ill; bowels generally costive; tongue a little furred. Was ordered a Powder, with Calomel, at bed-time, and a dose of Purging Mixture the following morning. After continuing the above plan for nearly a month, during which time the patient was purged every day, I find that she had greatly improved in walking, but that the involuntary motions of the arm continued, and that she could not speak better than when admitted. Conceiving that I had given the purgative plan a fair trial, on the 15th of June I ordered the same purging medicines to be exhibited, and ten grains of the Sub-Carbonate of Iron to be given in syrup three times a-day. Seven days afterwards, her father reported that the Powders had done her a deal of good, by stopping her lax and improving her appetite and strength. At this time she continued

to have four or five stools daily. I directed the Sub-Carbonate of Iron to be continued, and the Purging Powder and Mixture to be given in turns only every other day, as it was evident that so much purging weakened the patient, and retarded the cure. Fourteen days after the Carbonate of Iron was exhibited, the involuntary motions had diminished very much, and she could articulate much better. The same medicines continued.

"The patient continued gradually to recover, and on the 2d of August was so well, that she could use her needle, and walk very well, and only complained of debility, and that she could not articulate quite so well as before the attack. At this time she continued to have four or five motions daily, which made me discontinue the Purging Powder. The Carbonate of Iron was ordered to be continued, and the Purging Mixture every morning, when necessary.

"*August 9th.* She now labours under involuntary motions in the extremities of the *left* side of the body. The right side is now free from twitching, or involuntary motions of the muscles. Her relations gave her three of the Purging Powders, of their own accord, in the course of last week. Stools black (from the Iron.)

"Contr. Pulv. Purg. et Mist. Purg. Omittr. Ferri. Sub-Carbonas. Capiat Infusi Gentianæ C. ℥ss. bis in die.

"*August 16th.* The involuntary motions continue in the left extremities. Articulates better. Bowels open. Stools not so dark.

"Contr. remed.

"*August 23d.* Rather better.

"Contr. remed.

"*August 30th.* The involuntary motions in the left arm have been worse since last report, but now have abated again. She was purged all last week.

"Intermittr. Pulv. Purg. Contr. alia.

"*September 6th.* Rather better. Open in the bowels.

"Contr. remed.

"*September 13th.* The Purging Mixture moves her very often. The involuntary motions continue.

"Contr. Mist. Purgans, p. r. n. Omittr. Infus Gentianæ C. Capiat Oxydi Zinci gr. x. ter in die ex syrupo.

"*September 20th.* Vomited the first dose of the Oxyde of Zinc, but retained the subsequent doses, which, she informs me, occasioned an unpleasant heat in the abdomen, with now and then a sensation of heat striking as low down as the knees. She further adds, that the Oxyde of Zinc made her chilly at

first, and was succeeded by an intolerable sensation of heat; and that it has taken away her appetite. The involuntary motions have not been so frequent for the last two days.

"Capiat Oxydi Zinci gr. v. ter in die. Repetr. Mist. Purgans, p. r. n.

"*September 27th.* The involuntary motions still continue. Complains of being feverish. Has six or seven stools daily, of a light colour, but very offensive

"Omittr. Oxydum Zinci. Sumat Misturæ Purgantis ℥i. omni mane. Capiat Tæ. Iodini gutt. ex aquæ cyatho, ter in die.

"*October 4th.* Feels better. Has more command over the left arm, and the involuntary motions are much less frequent. Bowels are moved two or three times every day, and stools of a brownish yellow colour.

"Contr. Mist. Purgans. Sumat Tæ. Iodini gutt. xv. ter in die ex aqua.

"*October 11th.* Continues to improve.

"Contr. remed.

"*October 18th.* Says she is only twitched a little at times, and that she can speak very well now. Feels stronger. Appetite better. Bowels open.

"Contr. remed.

"*October 25th.* Is very little troubled with the involuntary motions or twitchings. Speaks as well as ever. Recovers flesh and strength. Bowels open, without being purged. Iodine agrees very well.

"Contr. Mist. Purg. p. r. n. Capiat. Tæ. Iodini gutt. xx.

"*November 1st.* Is very seldom twitched now. Feels an improvement in her general health. Articulates very distinctly, and to all appearance is well.

"The medicines were continued till the 22d of November, with the view of preventing a relapse, when she was discharged cured."

"Remarks.—I consider this as a very instructive case. In the first place, we observe active purging kept up for nearly a month, with very little beneficial effect. In the second place, we notice a marked improvement to take place very soon after the Carbonate of Iron was exhibited, although the aperient medicines were *diminished* in quantity. In the third place, after the disappearance of Chorea in the right side of the body, the left side was attacked by the same disease, during the exhibition of the same medicines, that had proved effectual in the cure of it on the right side, which is rather a

curious fact.—Surely a loaded and disordered state of the bowels could have had no share in inducing Chorea in the left side of the body, in this instance.

"Ought not the torpid, loaded, and disordered state of the bowels in Chorea, to be considered as a consequence, rather than as the cause of the disease?

"I have already mentioned, that Chorea appears sometimes in consequence of a fright. May not other passions, as well as fear, induce the disease?

"The Carbonate of Iron having failed to prevent the disease on the left side of the body, I doubted its power to cure, and, therefore, left it off, and gave first small doses of the compound Infusion of Gentian, and, afterwards, the Oxyde of Zinc, but not finding any marked benefit from them, I directed her to take the Tincture of Iodine, which soon accomplished a cure, and, at the same time, greatly improved her general health."

"Case II.—Mary Parrott, æt. ten, Old Radford, December 23, 1822. For the last ten days has laboured under Chorea, in the right side of the body. Her father informs me, that her right arm and leg are constantly on motion, day and night, so that she kicks off the bed-clothes; and her sister, a girl, thirteen years of age, who sleeps with her, complains of her sides being sore from the kicks she receives during the night. The edges of the eye-lids are red and raw, the eye-lashes have fallen off, and the eye-lids are generally glued together in the morning. The disease of the eye-lids has existed since she had the measles, when a child two years of age. Flesh soft. Abdomen rather larger than natural.

"Capiat Ol Ricini ʒii. omni mane.

"℞ Tæ. Iodini ℥ss. Sumat gutt. vi. ter in die ex aqua.

"℞ Ung. Hydr. Præcip. Alb. ʒss.

"Illinentur tarsi palpebrarum unguento ter in die.

"*December 28th.* The involuntary motions continue. Has two stools daily, they are of a dark colour. The Tincture of Iodine agrees, and her father observes, that it enlivens her.

"Contr. remed.

"*January 4th*, 1823. Moves both the arm and leg less, and has more use of the right hand. Has been purged for the last two or three days, and her stools are more of a yellow colour, and less offensive. Eye-lids not so raw. Her father says, she is more lively than she used to be.

"Sumat Olei Ricini ʒii. alternis matutinis. Contr. remed.

"*January 11th.* The involuntary motions have very much

diminished in frequency and strength, in both extremities. Eye-lids less red and swollen. Bowels only moved once a day since she has taken the Ol. Ricini every other morning. Her father says, that she continues to experience an enlivening effect from the Tincture of Iodine.

"Capiat Ol. Ricini omni mane si opus sit et Tæ. Iodini gutt. viii. ter in die.

"*January 18th.* Can use the right hand now to wind cotton for her father, who is a frame-work knitter. Eye-lids less red and tumefied. Bowels open. The Iodine agrees.

"Contr. remed.

"*January 25th.* The involuntary motions have entirely ceased, and she can use the extremities of the right side of the body, as well as she ever could. Eye-lids nearly well. The fulness and hardness of the abdomen are quite gone. Has two or three stools daily.

"Contr. remed.

"*February 8th.* Has had no return of the disease.

"Discharged cured."

Seven others are reported at length, and the author concludes this department with a tabular view of seventy-two cases treated by the same means.

Chapter IV. illustrates the effects of Iodine in Scrophula, and is particularly important and interesting:

"Case I.—Sarah Carlin, æt. seventeen. Admitted an Out-Patient of the General Hospital, the 17th of April, 1821. This patient was evidently of a Scrophulous constitution, and had many of the Conglobate glands in the neck, considerably enlarged, and one above the right elbow joint, with the skin somewhat inflamed. Had had a discharge of matter, sometimes tinged with blood, from the right ear, for ten years, and the sense of hearing, in that ear, was lost. She also laboured under violent inflammation of the right eye, of three weeks standing. This patient also laboured under a certain degree of Bronchocele.* She was purged, and the eye-lids were leeched freely, several times. The inflammation was so far subdued on the 28th of April, that she had a solution of the Nitrate of Silver dropped into the affected eye, on account of a small hollow ulcer in the cornea; on the 30th, she began to

* See Tabular Veiw, and Notes, No. 18.

take fifteen drops of the Tincture of Iodine, three times a day, and the following day she swallowed about an ounce of the Tincture, which was rejected by vomiting, without any bad effects resulting from the mistake, as has been already mentioned

"On the 9th of May she was ordered twenty drops of the Tincture, three times a day; and on the 12th, the Bronchocele was dissipated, the Conglobate glands were very much reduced in size, the *discharge* from the ear had very much diminished, and she had *recovered* a certain degree of hearing. The eye was free from inflammation, the ulcer in the cornea had healed, her general health was greatly improved, and she was discharged with a supply of medicines to last for fourteen days, which was judged sufficient to complete the cure."

"Remarks.—The Iodine was prescribed, in this case, with a view to cure the Bronchocele, but the case afforded me an opportunity, at the same time, of witnessing the effects of Iodine in reducing the swelling of the Conglobate glands, from Scrophula; and also of observing the good effects of Iodine in diminishing a morbid discharge from the ear, and restoring hearing, in a certain degree. Although the leeches had, no doubt, a very considerable share in diminishing the inflammation of the right eye, in this instance, I have no doubt, that the Iodine had a highly beneficial effect in removing the opthalmia, and curing the ulcer in the cornea, as will more fully appear when I have brought forward the facts I have observed respecting the exhibition of Iodine in Scrophulous Ophthalmia. From this time I began to exhibit the Tincture of Iodine in Scrophulous enlargement of the Glands, in Scrophulous Ophthalmia, and in Deafness, being at that time unacquainted with the employment of Iodine in Scrophula, which has since been announced by the ingenious Dr. Coindet, of Geneva."*

"Case II.—Joseph C——, æt. forty, frame-work knitter, Hucknall Torkard, May 19th, 1821. One of the Conglobate glands, near the angle of the left jaw, is enlarged to about the size of a walnut, and is sore when pressed. The corneæ of the eyes are dim from specks, in consequence of Scrophulous Oph-

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* "Coindet's 3 Mem. on Iodine Trans. by Johnson."

thalmia of seven years duration. The upper lip is very thick, prominent, and chapped. Bowels regular. Pulse natural.

"Sumat Pilulæ Cambogiæ Comp. gr. x. h. s. nisi nimis fusa est alvus.

"℞ Tæ. Iodini ℥ss. Capiat gutt. xv. ter in die ex aqua.

"*June 2d.* The gland is nearly reduced one half, and is free from soreness. Eyes less inflamed. The upper lip is not so much swollen. Bowels open by the pills. Appetite better, and his general health is improved.

"Contr. remed.

"*June 16th.* The left eye is more inflamed. Gland about the size of an olive, and is free from pain or soreness, except when pressure is made upon it. Bowels tardy.

"Contr. Pilul. Capiat Tæ. Iodini gutt. xx. ter in die, et Magnes. Sulphatis ʒii. primo mane si tarda est alvus.

"*July 7th.* The gland is smaller and softer. Left eye still dim, but his vision is considerably improved, and objects do not appear red now, but nearly of the natural colour. Feels better, and stronger.

"Capiat Tæ. Iodini gutt. xxv. ter in die. Contr. alia.

"*July 21st.* Some return of inflammation in the left eye, he says from a fresh cold. The gland is very small, and feels soft and skinny.

"Contr. remed.

"*August 11th.* The gland is so small, it is not to be observed. The left cornea is still dim.

"Contr. remed.

"℞ Argenti Nitratis	-	gr. ii.
Aquæ Distillatæ	-	℥i.

"Solve. Instillentur gutt. iv. solutionis in oculo sinistro mane et hora somni. Contr. alia.

"*September 8th.* The remains of the gland are scarcely perceptible. Says his eyes are much better, and clearer than they have been for two years past.

"Omittr. Ta. Iodini. Contr. alia.

"*October 26th.* Patient says, that the gland has almost disappeared. Left eye much clearer and stronger.—Discharged cured."

"*On the Effects of Iodine in Scrophulous Ulcers.*"

"Case I.—Miss Angelina S——, æt. fourteen, June 6th, 1821. Has laboured under Scrophulous enlargement of the Conglobate glands, in both sides of the neck, for two years. A bunch of glands in the left side of the neck, suppurated and

burst in March, 1820, the ulcer healed up the following October, and broke out again in March last, and still continues to discharge. About the 1st of May, one gland, near the right angle of the jaw, and another near the clavicle of the same side, in a state of suppuration, were opened with a lancet, and a considerable quantity of a curdy purulent matter was discharged; they are now ulcers, and discharge a little. The patient also labours under some degree of enlargment of the Thyroid gland. Her father is full of scars, from Scrophulous Ulcers, that have formerly existed in his neck, and from the chin to the ears. She is of a delicate and weakly constitution. Has taken Pulv. Rhei. gr. x. and Magnes. Sulph. ʒii. every third day, and Tinct. Ferri Mur. gutt. x. three timea a day, in water, for the last five weeks. The ulcers look better ubon the whole, but as they have made no progress in healing for the last fourteen days, I have entered the case in my Journal, and have directed her to take ten drops of the Tincture of Iodine, three times a day, in a glass of water, instead of the Muriated Tincture of Iron, and to continue the Ceratum Resinæ dressings as before. On the 13th of June, all the glands were sensibly diminished in size, and the ulcers had greatly improved in appearance, with a considerable diminution of the purplish redness of the skin surrounding the ulcer. The Tincture of Iodine made her slightly sick at first, but does not occasion any inconvenience at present. Bowels regular, but stools not black as when she took the Muriated Tincture of Iron.

"Capiat Tæ. Iodini gutt. xii. ter in die. Contr. alia.

"*June 27th.* The Conglobate glands continue to subside, and the ulcers to heal, two of them have nearly closed. General health improved, and her food agrees now.

"Contr. remed.

"*July 4th.* The old ulcer, and the one near the clavicle, have cicatrized. The ulcer behind the angle of the jaw, and below the ear, continues open, and discharges; the skin around is of a reddish pulple colour. On the 30th ultimo, she began to menstruate for the first time, and the discharge has not yet entirely ceased. The Conglobateg lands continue to subside, and her general health to improve.

"Contr. remed.

"*July 18th.* The ulcer seems more disposed to heal, but the skin around is still of a deep brownish red colour. Says her appetite never was so good before. The Thyroid gland is still hard, and larger than natural.

"Capiat. Tæ. Iodini gutt. xx. ter in die.

"*August* 8*th.* Has been out of town for fourteen days. She has taken only eighteen drops of the Tincture for a dose, as she found twenty to disagree. The ulcer continues to improve in appearance, and discharges less.

"Contr. remed.

"*September* 5*th.* The ulcer is not larger than the diameter of a crow's quill. The edges of the sore have been touched with Lunar Caustic, about once a week. Glands continue to subside. Menstruates regularly. Has taken twenty-three drops of the Tincture for a dose, for fourteen days past; says they feel hot in her throat when taken in a cup full of water.

"Capiat Tæ. Iodini gutt. xxx. ter in die. Contr. alia.

"*Sept* 26*th.* The Tincture has been gradually increased to forty drops for a dose, since last report. The ulcer to be washed with a weak solution of the Sulphate of Copper, and to be dressed with the Ceratum Cetacei.

"Sumat Tæ. Iodini gutt. xl. ter in die.

"*October* 17*th.* Appetite good. Catamenia regular. Bowels open. Tincture agrees. The ulcer is larger, from a portion of the purplish red skin having sloughed from loss of vitality.

"Contr. remed.

November 7*th.* Has not been able to procure any Iodine for fourteen days. The ulcer continues to enlarge by the purplish red skin running into ulceration. Catamenia adsunt. Five days ago began to take twenty-five drops for a dose. There is still a good deal of hardness and enlargement of the glands, in the right side of the neck.

"Capiat gutt. xl. Tæ. Iodini ter in die. Contr. alia.

'*January* 30*th*, 1822. For the last week omitted the Tincture of Iodine, by my desire; and as no progress has been made in healing the ulcer, for the last month, the Iodine is ordered to be discontinued.

"℞ Tæ. Cinchonæ ℥ii. Capiat ægra Cochlearia ii. minima (tea-spoonsful) ter in die ex aqua. Contr. alia.

"*February* 13*th.* Ulcer looks better. Glands rather smaller. Bowels open. Appetite better of late.

"Capiat Coch. iii. minima Tæ. Cinchonæ ter in die. Contr. Ceratum Cetacei et Pulv. Aperiens p. r. n.

"*February* 20*th.* The ulcer, and skin around, which is a little excoriated, are to be washed daily with a dilute solution of the Sulphate of Zinc.

"Contr. remed.

"*March* 13*th.* The Zinc lotion has removed the rawness

of the skin. A Conglobate gland near the left clavicle, suppurated, and was opened about eight days ago.

"Omittr. Ta. Cinchonæ. Contr. alia. Sumat Tæ. Iodini gutt. xxx. ter in die.

"*April* 3*d*. She feels better since she has resumed the use of the Iodine.

"Contr. remed.

"*May* 1*st*. Two glands have ended in suppuration, and been opened. As no benefit appears *now* to arise from the internal exhibition of the Iodine, it is ordered to be discontinued, and the patient is desired to take ten drops of the Muriated Tincture of Iron, three times a day.

"*May* 15*th*. Another abscess was opened on the 8th instant. The ulcers look better.

"Contr. Tinct. Ferri Mur. Pulv. Aperiens, p. r. n. et Cerat. Cetacei.

"*May* 29*th*. Glands in the neck smaller and softer, and the ulcers seem disposed to heal.

"Contr. remed.

"*June* 12*th*. The hardness in the site of the ulcers is very much gone, and there is that white appearance at the edges of the ulcers, which attends cicatrization when it is going on quickly. Countenance wears the appearance of health, and the eyes are brilliant.

"Contr. remed.

"*June* 26*th*. The ulcers continue to heal. Appetite good. Menstruates regularly.

"Contr. remed.

"*July* 3*d*. During the last fourteen days the ulcers have healed rapidly. The Conglobate glands that have not suppurated, have subsided to nearly the natural size. Is directed to wash the ulcers with equal parts of brandy and water, instead of the Sulphate of Zinc lotion.

"Contr. remed.

"The ulcers continued to heal, and were all cicatrized about the latter end of July, and the patient was in good health and spirits. I recommended her to wear warm clothing during the winter, and to take a dose or two of the Muriated Tincture of Iron daily, during the continuance of the cold weather, with the view of preventing a relapse."

"Remarks.—I frequently see this patient, and am happy to be able to state, that she has remained free from the disease ever since, and has enjoyed excellent health. The Tincture

of Iodine had very good effects in this case, and the last ulcer was almost closed when, unexpectedly, it became worse, and some of the glands also began to swell, and afterwards went on to suppuration, which showed, that the Iodine had lost its salutary influence. I, therefore, directed her to take Tincture of Bark, and not finding that to be of much service, I resumed the use of the Muriated Tincture of Iron, which had a much better effect the second time it was exhibited, than it had the first. I am of opinion, that had I given the Iodine in doses of from ten to fifteen drops, three times a day, it would have had a better effect than the doses of forty drops, that were latterly given, and still better, *perhaps*, if the Tinctures of Iron and Iodine had been exhibited, each for a month in turns, as the most powerful medicines often lose their effect when long continued."

Several cases of Fistula Lachrymalis are also recorded, in which the Iodine was employed with great advantage. These, however, we omit for want of room, and for the same reason we pass over several cases of Deafness, and of Dysphagia, successfully treated, and proceed to give cases exhibiting the effects of the article in White Swelling.

"Case I.—Anne Kidd, æt. twenty-eight, married, and suckles a child, six month old. Lived in Little Guilford Street, London. Applied to me for gratuitous advice, the 12th of September, 1821. She informed me, that she had laboured under a disease in the left knee for the last twelve months; that she had been under the care of Mr. G. Surgeon, of Great Surrey Street, who recommended her to go into the country for the benefit of fresh air. Before she came into the country she was very much reduced in her flesh and strength, and had lost her appetite. Since she has been in the country, she informs me, that she has, in a great measure, recovered her flesh and strength, and says that her appetite is very good.

"The knee is uniformly swollen, and firm when pressed, without any fluctuation in the cavity of the joint, or any external redness of the skin, but the veins are much larger, and more numerous than natural, and the temperature is higher. An ulcer formed in consequence of the bite of a leech, the 3d May last, and has not since healed. Informs me, that she has had twenty-eight leeches, in the whole, applied to

the knee, since it has been bad. The knee measures two inches more in circumference than the sound one, and she says that the complaint began with aching in the bone, and that the knee is sore all over when she is warm in bed. She complains of much stiffness, weakness, and pain, when she walks, and the leg is bent, in a certain degree, on the thigh. I find the following observations in my journal: the case is decidedly White Swelling, and as a collateral proof that it is of a strumous character, I have learnt, by interrogating the patient, that her father and a brother have lately died of consumption. Her bowels are inclined to be costive. Tongue a little furred.

"Sumat Magnesiæ Sulphatis ʒii. omni mane si tarda est alvus.

"℞ Tæ. Iodini ℥ss. Capiat guttas xx. ter in die ex cyatho vinario aquæ et post septimanam ægra sumat guttas xxx. ter in die. Curetur ulcus Cerato Cataceï."

"Note.—This woman was desired to call upon me occasionally, but she never did so; I learnt, however, from the Druggist who furnished the medicine, that she had called several times for a supply of it, and told him, that she was a great deal better, but that was all he knew respecting the effects of the medicine. As I was anxious to know the issue of this case, I wrote to the patient's husband, requesting him to inform me respecting the benefit his wife had derived from the Medicines prescribed for her by me, but no answer was returned. I was determined, if possible, to find out how the case had terminated, and am indebted to the kindness of two of my friends for finding her out in London! but all the satisfaction or information that she would give them was, that her knee was perfectly well."

"Case II.—Henry Richardson, æt. seven, Exchange Court, Mount Street, November 3d, 1821. His left knee has been swollen between four and five months. The skin is of the natural colour, but the knee is painful when pressed, or when he walks or stretches out the leg in bed. The left knee measures about an inch more than the sound one. I have no doubt of the disease being White Swelling: as a collateral proof I may observe, that his maternal aunt once laboured under White Swelling in the knee, which terminated in a stiff joint, so that she is now obliged to walk on her tip-toe.

I directed a blister to be applied to each side of the patella, and desired his father to give him a quarter of an ounce of Epsom Salts every morning, and to bring him to me in the course of a few days.

"*November 6th.* Thinks the knee rather easier since the blisters were applied. The Salts move him two or three times daily. Appetite moderate.

"Capiat Magnesiæ Sulphatis ʒii. omni mane et Tæ. Iodini gutt. xii. ter in die ex cyatho vinario aquæ.

"*November 10th.* Blisters nearly healed. The knee is no smaller, but says that it is not so painful. Has two motions daily. Pulse 84, small and soft. Sleeps better.

"Capiat Tæ. Iodini gutt. xx. ter in die. Contr. Magnesiæ Sulphas.

"*November 17th.* Has less pain in the knee, but it is no smaller. Bowels opened two or three times daily by the Salts.

"Capiat Tæ. Iodini gutt. xxv. ter in die.

"*December 1st.* Except one night, has been free from pain in the knee since last report. The knee measures half an inch less than when he came under my care. Bowels open.

"Capiat Tæ. Iodini gutt. xxx. ter in die. Contr. Magnes. Sulph.

"*December 12th.* Last week had some slight return of pain in the knee, but it is quite easy now. There is still a little fulness of the knee, which a blister perhaps may assist in dissipating.

"Capiat Tæ. Iodini gutt. xxxv. ter in die. Contr. Magnes. Sulphas. Applr. Emp. Cantharidis genu."

"Note.—This boy was not again brought to me, which I thought very strange. On the 6th of October, 1823, I happened to be in the court where his father lives, and called to inquire after the boy, and to ask the reason why they did not continue to bring him to me. The mother of the boy, with a very sorrowful countenance, informed me, that an old woman persuaded her husband and herself to rub the knee with a mixture of oils, which she warranted to cure the disease, but after rubbing the knee with the oils for some time, it became much worse, and the plan was abandoned. Another old woman undertook to cure the disease by poultices of figs, which she extolled as an infallible remedy in White Swelling. Under this treatment the knee enlarged, suppurated, and

burst, in three or four places; now there are six openings, discharging more or less matter, and the boy is greatly emaciated, but he is still able to sit and run lace. After being nearly exhausted by the discharge, he was admitted an In-Patient of the General Hospital, under the care of Mr. Attenburrow, and his life was saved by this able and experienced Surgeon performing amputation of the thigh, the 3d of March, 1824. From the progress made towards a cure during the time that the patient continued under my prescription, I have no doubt whatever, that the Iodine would have accomplished a complete cure in this case, if the credulity of the parents had not been imposed upon by the impudent pretensions of the old women."

"Case III.—Mrs. E——, æt. thirty-three, March 9th, 1822. Is of a scrophulous constitution, and had an abscess in the left hip, which was opened about two years since, and still continues to discharge a little thin, and at times, curdy looking matter. She informs me, that the right elbow joint has ached for the last two years; there is a general fulness, swelling, and stiffness of the joint, so that the arm is always bent in a certain degree, and cannot be extended. The skin covering the affected joint is of the natural colour. Says that she has great pain in the elbow when she attempts to lift a heavy body with the right hand. When her arm is suspended in a sling, says that she experiences rather an aching sensation than pain. Bowels sometimes tardy.

"Capiat Pil. Cambogiæ Comp. gr. x. h. s. pro re nata. Sumat Tæ. Iodini gutt. xx. ter in die ex aqua. Applr. Emp. Cantharidis cubito dextro h. s.

"*March* 14*th.* Blister rose well; the joint is less swelled, and is free from pain. The ulcer in the hip discharges less. Bowels open by the Pills.

"Capiat Tæ. Iodini guttas xxv. ter in die. Contr. Pilæ. Cambogiæ Comp.

"*June* 12*th.* She informs me, that she has taken thirty-five drops of the Tincture, three times a day, since last report, with advantage. The object of her present visit to me is to know what she is to do with a suppurating gland, about the size of a pullet's egg, on the inner part of the right arm, a little above the brachial extremity of the ulna. The joint is less swelled and stiff. The left hip feels almost well, but still discharges a little. Has been in the country the last ten days for change of air.

"Capiat Tæ. Iodini gutt. xxxv. ter in die. Contr. Pil. Cambogiæ Comp."

"This patient did not call upon me again for six months. She derived so much benefit from the Iodine, that after the bursting of the abscess, she could use her arm as well as ever, the joint continues somewhat stiff, and the arm a little bent."

"*Cases of the Morbus Coxarius, or Disease of the Hip Joint, in which Iodine was employed as the chief remedy.*

"Case I.—Henry Houghton, aged two years and a-half. New Radford, March 19th, 1823. The right lower extremity is very much wasted, and is longer than the other. The right hip is considerably larger than the sound one, and he cannot walk a step. Bowels irregular.

"℞ Hydr. Submur.	-	gr. ii.
Pulv. Jalapæ	- -	gr. v.

"Misce ft. Pulvis alternis matutinis sumendus. Imponatur Emp. Cantharidis Coxæ affectæ.

"*April 23d.* His bowels are now open. Hip still painful.

"Denuo Imponatur Emp. Cantharidis Coxæ. Capiat Magnes. Sulphatis ʒi. mane. Omittr. Pulvis. Aper. Sumat Tæ. Iodini gutt. v. ter in die.

"*August 9th.* He has not taken the drops regularly, and has not been brought to me for a month. The child's general health is improved, and he can walk when he has something to balance or support him, as a wall.

"Contr. remed.

"℞ Adipis Præp. ℥i. Tæ. Iodini ʒiss. Misce ft. Unguentum quo fricentur partes affectæ mane et hora somni. Repetr. Sulphas Magnesiæ p. r. n.

"*August 21st.* Is better, according to his mother's report, and improves in walking. Has not taken the Tincture of Iodine regularly: Friction with the Iodine Ointment has been regularly employed.

"Sumat Tæ. Iodini gutt. v. ter in die. Contr. Ung. Iodini et alia.

"*September 6th.* Continues to improve. Has more power and feeling in the affected limb. Is desired to walk with crutches.

"Contr. remed.

"*September 9th.* Can walk pretty well with crutches; when he attempts walking without them, he places the right hand on the right thigh of the same side, but he walks very badly. The right extremity is a little longer than the other. He has taken no Iodine for fourteen days. It appears that the child spits out the medicine in spite of his mother. Appetite good.

"Contr. remed."

"Remarks.—This child improved more than could have been expected, considering the irregular way in which he was brought to me, and in which the medicine was taken. It does not appear from my journal, that the child was afterwards brought to me; but the case is interesting, as it shows, that a decided improvement was accomplished, even under the irregular use of the medicine."

"Case II.—Elizabeth Richards, aged eight years and a-half, from Poplar Place. General Hospital, May 13th, 1823. Her mother says, that she has been ill for two months, and that she has always been weak in the loins. The left hip is very much larger than the right, and is so painful, that she cannot walk, or even lie upon it. The skin of the hip is of the natural colour. The spine and pelvis are so distorted in a lateral direction, that the left inferior extremity appears to be longer than the right. She is very much reduced in flesh and strength. Bowels generally costive. Stools more offensive than natural.

"Sumat Misturæ Purgantis ℥i. omni mane nisi nimis fusa est alvus. Applr. Emp. Cantharidis Coxæ affectæ h. s.

"*May 14th.* Blister has risen, and remains on. Bowels have been opened by the physic.

"Contr. Mist Purgans.

"*May 15th.* Complains of having a bad taste in her mouth. Stools said to be of a light colour.

"Contr. Mist. Purgans.

"*May 19th.* Feels easier. Blistered part has healed. Is kept in bed. Appetite moderate.

"Contr. Mist. Purg. alternis matutinis. Sumat Tæ. Iodini gutt. viii. ter in die ex aqua.

"*May 24th.* Now that she is quiet in bed, she feels very little pain in the left hip. She complains of some pain and swelling in the left knee. The Iodine agrees very well.

"Contr. remed. Applr. Emplast. Cantharidis genu sinistro h. s.

"*May* 26*th.* The blister has removed the pain in the knee. Is free from pain in the hip.

"Contr. remed.

"*May* 28*th.* Feels better. Pain and swelling of the knee is gone, and the blister nearly healed. She is tired of being in bed. Let her sit up a little every day. Bowels open.

"Contr. remed.

"*June* 2*d.* Her general health continues to improve. She cannot use the left lower extremity.

"Imponatur Emp. Cantharidis coxæ sinistræ h. s. Contr. alia.

"*June* 12*th.* The blister has healed. She complains of pain in the hip when she puts the limb in motion. The hip is not much reduced in size.

"Contr. remed.

"℞ Adipis Præp. ℥i. Tæ. Iodini ʒi. M. ft. Ung. quo fricetur coxa sinistra m. et h. s.

"*June* 19*th.* She still labours under a considerable degree of pain in the hip, and the swelling is not much reduced.

"Applr. Emp. Cantharidis coxæ affectæ. Fricentur genu et femur Unguento. Contr. alia.

"*June* 23*d,* 1823. Complains of so much pain in the left inferior extremity, that she can scarcely allow her stocking to be drawn on; the parts are free from swelling or redness. Is a little sick at stomach. Bowels open.

"Omittr. Ta. Iodini. Contr. alia.

"*July* 1*st.* The hip is less swelled, and she is freer from pain.

"Contr. remed.

"*July* 3*d.* Hip much easier. No head-ache. Bowels open.

"Capiat Tæ. Iodini gutt. vi. ter in die. Fricr. Coxa sinistra Unguento. Contr. Mist. Purg. p. r. n.

"*July* 10*th.* No pain whatever in the hip. Walks with crutches. Tumefaction of the hip continues to subside.

"Contr. remed.

"*July* 16*th.* Improves in walking, and says that she feels better.

"Contr. remed.

"*July* 19*th.* Experiences no pain when she walks. The hip continues to subside.

"Contr. remed.

"*July* 28*th.* Walks better. No pain. Swelling continues to diminish.

"Contr. remed.

"*August* 4*th*. Is free from pain, but complains of weakness, and some numbness and coldness in the left lower extremity, from the hip downwards, so that she cannot walk without a pair of crutches. Her general health is not amiss now.

"Contr. remed.

"*August* 6*th*. When I make firm pressure upon the left hip, it occasions some degree of pain. The left hip is very little larger than the right.

"Applr. Emp. Cantharidis coxæ sinistræ h. s. Intermittatur Ung cum. Ta. Iodini. Contr. alia.

"*August* 9*th*. Feels easier since the blister was applied, and walks better.

"Contr. remed.

"*August* 16*th*. Blister has healed. Hip better.

"Contr. remed.

"℞ Adipis Præp. ℥i. Tæ. Iodini ʒiss. misce ft. Ung. quo fricetur coxa sinistra m. et h. s.

"*August* 26*th*. She is so far recovered, that she has this day been made an Out-Patient of the Hospital.

"Contr. remed.

"*September* 12*th*. Her mother reports, that she is freer from pain, and when she walks, can put her heel to the ground better than she used to do. Says that her daughter's hip 'is more in its place, and smaller.'

"Contr. remed.

"*October* 17*th*. Is better. Drops occasion some head-ache.

"Omittr. Ta. Iodini. Contr. alia.

"In my absence, I find her discharged cured in the journal, but without any date."

Cases illustrating the effects of Iodine in diseases of the Spine:

"Case I.—Miss Anne D——, æt. eleven, Nottingham, September 20th, 1821. Is very tall for her age, and of a spare habit. Countenance pale and sickly. She complains of weakness and pain in the spine, particularly where there is a degree of posterior curvature of two or three of the vertebræ. She labours under great disorder of the stomach and bowels, and I find that her stools are very offensive. She has picked her nose until blood is discharged, and coagulated so as nearly to obstruct the passage of air into the nostrils. The patient is in bed, where she is desired to remain. Her mother is a tall woman, of a spare habit, and delicate constitution, and an

elder sister died from Distortion of the Spine some years since.

"℞ Hydrag. Submur. - ℈i.
Pulv. Rhei. - - ℈ii.

"Misce et divide in pulveres vi. Capiat i. ex syrupo alternis noctibus.

"*September 27th.* Has taken the powder with some improvement in the colour and smell of the stools. Pulse 96, and of moderate strength.

"Contr. Pulveres. alter. noct.

"℞ Tæ. Iodini ℥ss. Capiat gutt. vi. ex aquæ cyatho ter in die.

"*September 29th.* She is nearly in the same state as to the spine. Her bowels are in a more regular and settled state.

"Contr. remed.

"*October 1st.* The external nares have nearly healed, and she feels herself much better and stronger.

"Contr. remed.

"*October 4th.* She is so much better, that I find her down stairs this morning. Appetite improved.

"Contr. remed.

"The patient continued the medicines, but did not keep her bed, till the 19th of November following, when she had recovered more than her usual health, and made no complaint of pain or weakness in the spine. I believe she afterwards took only what medicines then remained."

"Remarks.—I called at her father's the 6th of May, 1825, to inquire after her, that I might report her present state of health. I found her from home; but her mother informed me, that she has continued in good health ever since, and that the back bone has not shown any disposition to grow out since I attended her; she added, that her daughter was soon fatigued with walking, or any considerable exertion."

"Case II.—Miss Mary C——, æt. fourteen, April 10th, 1822. Is very tall and slender. Complains of weakness in her back, and of some pain when she sits up long, or walks. She points to a small tumour in the lower part of the back, as the site of the pain. I find that the swelling is occasioned by one of the spinous processes in the lower part of the

back, projecting beyond the level of the rest; the integuments are a little swollen and puffy, where they cover the tumour. Complains of some pain in the left side of the abdomen. No appetite. Tongue furred and pale. Has a motion only every other day. Has menstruated four or five times in course of the last twelve months. Face very pale.

"℞ Pilæ. Aloes Comp. ʒi. forma in pilulas xii. quarum sumat ii. omni nocte h. s.

"℞ Tæ. Iodini ℥ss. Capiat ægra gutt. xx. bis in die ex aqua.

"*April* 13*th.* Pain in the left side of the abdomen is easier since her bowels have been more open. Vomited her food yesterday. Still complains of pain and weakness in the back. The pills procure two motions daily. Pulse 64, small and soft.

"Contr. Pilul. Aper. Sumat Tæ. Iodini gutt. xx. ter in die. Applr. Emp. Thuris. Compt. dorso.

"*April* 17*th.* She feels better in every respect.

"Contr. remed.

"*April* 20*th.* Had pain in her shoulders and elbows yesterday, but it is less severe to-day. Had a long walk on the 18th instant, from which she felt much fatigued. She lies down occasionally, as her back aches when she sits up long.

"Contr. remed.

"*May* 5*th.* Feels stronger, and is free from pain in the back, except when she sits up too long. She thinks that the tumour is smaller.

"Contr. Pilulæ. Capiat Tæ. Iodini gutt. xxx. ter in die.

"*May* 13*th.* On removing the plaster, I find the tumour has nearly disappeared, and there is no redness of the skin. Says that she feels stronger and better, and that her appetite improves. Tongue slightly furred. Body open by the pills.

"Contr. remed. Denuo Applr. Emp. Thuris. Comp. dorso.

"*May* 19*th.* Continues to improve, and her back is stronger. Pulse 84. Bowels open by the pills. Menstruates regularly. Is going to a boarding school in the country. I have desired her to take the drops a week longer, and to keep her bowels open by the pills, when necessary."

"Note.—This young woman did not again experience any return of the affection of the spine; but some time afterwards she was attacked with symptoms of Phthisis Pulmonalis, and died of that disease.

"Case III.—John Wapplington, æt. seventeen, lace runner. Was sent by the Overseer of Bilborough parish to the General Hospital, near Nottingham, the 24th of September, 1822. He informs me, that his health has been bad for the last six months. Had an abscess at the back part of the right thigh, a little above the ham, for which he was treated and discharged cured (by Mr. Oldknow, an eminent Surgeon, of this establishment,) after he had remained eight weeks in the Hospital. I had an opportunity of seeing the abscess before his admission into the Hospital, and I am of opinion, that it was of a scrophulous nature. He complains of great weakness, and that he can scarcely walk, owing to want of power in the lower limbs. The lumbar vertebræ are convex on the right side, and concave on the left, forming what is called a lateral curvature, in a considerable degree. The spinous process of the lowest dorsal vertebra projects more than the others. He labours under so much stiffness and pain across the loins, that he cannot support the body long in an erect posture. Is of a spare habit of body. Face pale. Tongue a little furred in the middle. Pulse 108, small and soft. Bowels tardy.

"Sumat Pil. Cambogiæ C. gr. v. omni nocte.

"℞ Tæ. Iodini ℥ss. Capiat gutt. xv. ter in die ex cyatho vinario aquæ.

"*September 28th.* Has been in bed the last three days. His back is not so stiff and painful as when admitted. Bowels open by the pills.

"Contr. Pil. Sumat Tæ. Iodini gutt. xx. ter in die.

"*October 2d.* Complains of being troubled at times with giddiness. Pulse 88, and soft. Bowels open.

"Intermittr. Tæ. Iodini. Pergat in usu Pil.

"*October 5th.* Feels better. Is free from giddiness.

"Capiat Tæ. Iodini gutt. xv. ter in die. Contr. Pilulæ.

"*October 7th.* Says that he feels stronger, and has less pain in his back. Appetite good. Sleeps well.

"Contr. remed.

"*October 14th.* Continues to recover strength in his back. Appetite good, although he has caught a cold.

"Contr. remed.

"*October 19th.* The catarrhal symptoms have nearly left him. Feels better in every respect.

"Contr. remed.

"*October 23d.* His general health is better, he gains flesh, and says that he feels much stronger in the loins. Appetite good. Medicines agree.

"Contr. remed.

"*October* 31*st*. Feels better in every way.

"Contr. remed.

"*November* 2*d*. He is now almost free from pain in the loins.

"Contr. remed.

"*November* 4*th*. Is better, and has scarcely any pain.

"Contr. remed.

"*November* 19*th*. The patient has continued gradually to recover flesh and strength, and he makes no complaint of weakness in the loins, or of want of power in the lower limbs. —Discharged cured."

ART. VI.—*Remarks on Irritative Fever, commonly called the Plymouth Dock-Yard Disease; with Mr. Dryden's detailed account of the Fatal Cases, including that of the lamented Surgeon, Dr. Bell; Dedicated, with permission, to Commissioner Shield.* By JOHN BUTTER, M.D., F.R.S., F.L.S., & W.S. Fellow of the Royal College of Physicians in Edinburgh, and of the Royal College of Surgeons in London; Member of many Medical and Phrenological Societies in London, Edinburgh, Paris, Philadelphia, &c. &c.; President of the Western Medical and Chirurgical Society, and Physician to the Plymouth Eye Infirmary.

To many of the profession, and particularly to the country practitioner, the very title of this book may at first view appear repulsive, as indicating the local character of the disease investigated, and the insolated nature of the pathological observations. He neglects one of the most important sources of improvement, however, who regards as unimportant to himself the strong traits which disease exhibits in its endemic or epidemic character, however improbable it may be, that he shall ever encounter the same form of disease. It is when "pestilence walks abroad," that we become familiar with her aspect. It is then that diseases, which are obscure and equivocal, from imperfect developement, unfold themselves to our view, and suggest general pathological principles, which may influence the treatment of almost every class of diseases.

The Plymouth Dock-yard-disease, therefore, exhibiting, as it does, such striking phenomena, should be studied with attention by every one who would improve himself by the observation and experience of others.

The present book, we apprehend, is one of those which can never become generally known to the public but through the medium of reviews, for although it contains some very important matter, which ought to be known to every member of the profession, yet this bears no proportion to the mass of irrelative comments and unconnected inferences with which it is overwhelmed. The author has so striven to magnify the history of this disease into a volume, that it is no little exercise of patience, even to one accustomed to the task, to cull out that which is useful and important. It is a pearl wrapped in a thousand envelopes, and which would be thrown away by almost any one but a patient reviewer, before half of its covers were stripped off. But to our task—

It appears that there occurred in his majesty's dock-yard at Plymouth, in the summer of 1824, a remarkable epidemic disease, which there and in the adjacent country, excited much apprehension. The labourers constantly employed at this place are about two thousand. Of these fifteen were attacked with a malignant erysipelatous disease, excited by the external injuries to which such persons are constantly liable in their duty. Twelve of them died. It is calculated that in this yard between three and four thousand men wound themselves in the course of the year, but that of these only four hundred are incapacitated for duty, and it is ascertained that for ten years previous only two deaths had occurred from fever, supervening only local injuries.

To exhibit at once, however, the character of this disease, we quote the following cases:

"*Remarks on the Plymouth Dock-yard Disease, &c.*

"Case I.—William Cowle, æt. forty-five, shipwright, St. John-street, Devonport, generally healthy, and temperate in living—of a spare habit, and middling stature.

"1824. *August 1st.* Was laid up from his duty in consequence of a punctured wound, received some days since, in the sole of his left foot from a small nail, which ran through his shoe. The wound is now inflamed and painful. Cataplasms of oatmeal* boiled in water were applied, and the following cathartic pills given:—

"℞ Ext. Colocynth. comp. gr. viij.
Hydr. submur. gr. iij. Confect. q. s. m.
"Fiat pilulæ duæ.

"2*d.* Pain increased, and inflammation extending over the arch of the foot; the original puncture being enlarged, gave exit to some pus. Purging mixture taken, agreeably to the subjoined formula:—

"℞ Infusi Sennæ (*Ph. Lond.*) ℥ij.
Magnesiæ sulphatis ℥i.
Aquæ ℥vi. m. f. mistura,
"Cujus capiat quartam partem, pro re nata.

"3*d.* In the course of the night, a piece of leather, which had been forced in by the nail, was discharged with the poultice. He now felt easier. Bowels freely opened; tongue clean; pulse about 80, and soft. Cataplasms and cathartic mixture continued.

"4*th*, 5*th*, and 6*th*. The reports were favourable. Continued his mixture occasionally.

"7*th*. Considerable fever came on, and inflammation extended up the leg, which is painful. Pulse 100, and easily compressed; much head-ache, nausea, and thirst. He was blooded to 16 ounces. Syncope produced. Cataplasms applied to the foot, and evaporating lotions to the limb. He continued the cathartic mixture.

"8*th*. Blood buffed, bowels open, head-ache relieved. Bleeding repeated to 10 ounces. Fainting prevented the further loss of blood. Continued the cathartic medicines and topical applications.

"9*th*. He fainted frequently during the night; pulse quick and feeble; the whole limb much enlarged and erysipelatous. Cataplasms were applied to the foot, and evaporating lotions to the limb. Calomel, antimony, and opium, given with confection in boluses. Cathartic mixture continued.

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* "This form of poultice, or that of bread and water, it should be understood, was generally used for the following patients, when none other is specified.

"10*th* and 11*th*. Boluses of calomel, opium, and antimony, continued.

"12*th*. Erysipelas extending up the thigh; great prostration of strength; pulse quick and feeble. Lotions omitted; cataplasms substituted over the whole limb. Fomentations of chamomile flowers and poppy-heads were ordered; bowels kept solvent by an infusion of senna, Epsom salts, and tartarised antimony.

"13*th*. The whole limb to the groin has gradually and progressively enlarged; its size excessive. Medicines as yesterday.

"14*th*. Erysipelatous tension and tenderness exist over the abdomen; breathing oppressed; pulse 130, weak and irregular. Opium, camphor, and aromatic confection, ordered in boluses; and spt. ammon. aromatic, with spt. lavand. comp. in mint-water, frequently.

"15*th*. Singultus; extremities cold; pulse scarcely perceptible; bowels confined. Castor oil and tincture of senna given.

"Two o'clock, P. M. Carbonate of ammonia and wine frequently; blisters to the abdomen; dissolution approaching. Died in the night, perfectly rational nearly to the last. Body not examined."

"Case II.—John Henwood, æt. fifty, house-carpenter, working as a sawyer, and residing at Millbrook, dark complexion, robust, and healthy.

"On the 4th of August, 1824, received a slightly lacerated wound on his right hand by a saw. Cataplasms applied. Cathartic pills and cathartic mixture,* taken immediately.

"5*th*. Easy.

"6*th*. Reported unable to attend the surgery, and, on being visited, was found labouring under considerable fever. Pulse about 120, strong and incompressible; severe head-ache and thirst. The whole hand much inflamed Blooded to 34 ounces; cathartic pills given, and compound powder of jalap. —(*Ph. Ed.*)

"7*th*, 8*th*, and 9*th*. Fever abated, cataplasms continued, and fomentations ordered.

"10*th*. Continues better, but the whole arm is much swollen and erysipelatous; an obscure fluctuation was perceived on the back of the hand, from which, on being opened, pus could be

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* "The cathartic pills and mixture, directed in the foregoing formulæ, may be considered as those which were generally employed in the Dock-yard, when a difference is not otherwise expressed.

pressed out as from a sponge. Calomel, opium, and antimonial powder, given with confection in boluses.

"11*th*. The tumefaction of the hand much reduced. Anodyne bolus continued, and fomentations of poppy-heads and chamomile flowers.

"12*th*. The wound on the hand discharging freely pus and membranous sloughs. The arm very painful; pulse rapid, but soft; tongue clean and moist. Cataplasms, fomentations, and boluses continued.

"13*th*. Made an opening on the fore arm, which discharged a quantity of pus and sloughy matter.

"14*th*. Medicines continued.

"15*th*. Made another opening on the back and inferior part of the humerus, which discharged about eight ounces of pus.

"16*th*. The pain and tumefaction of the arm much reduced; the discharge very free, with quantities of sloughy matter. Bark given, with diluted sulphuric acid.

"17*th*. Fever much abated; supported the arm with a bandage leaving the apertures clear, to which poultices were continued. Wine given; bark, &c. repeated.

"18*th*. Better—matter could be pressed along the humerus, from behind the scapula. The auxillary glands not affected. Cathartic mixture taken occasionally.

"19*th* and 20th. Improving.

"26*th*. The hand and fore arm nearly sound, and the discharge from the humerus much lessened; complains of pain in his left leg and thigh, which are œdematous, but not discoloured.

"*September* 1*st*. The left thigh very painful; body much emaciated; fever increased. Bark omitted; anodyne bolus given at night, and cathartic mixture occasionally; fomentations and soap liniment ordered.

"3*d*. Symptoms as above; pulse about 130, and weak; tongue moist; no appetite. Fomentations continued.

"7*th* to 10*th*. Fluctuation of matter became gradually perceptible in different parts of the left thigh, to which cataplasms were applied. His strength was much exhausted.

"12*th*. The propriety of opening the limb doubted, from his excessive debility.

"15*th*. By Dr. Bell's consent, an incision was made a little above the patella, and another on the posterior part of the thigh, from which was discharged an immense quantity of well-formed pus; he bore the operation well. Wine and opium continued.

"16*th.* Discharge very profuse; the tension and pain of the limb much relieved.

"18*th.* Feels more comfortable, but evidently loses ground. Medicines, &c. repeated.

"20*th.* A slough formed on the lower part of the sacrum, and excoriations in several places over the spine. Cataplasms of yeast were applied.

"25*th.* A large slough separating from the back part of the thigh. Bark, wine, and opium, continued.

"*October* 2*d.* Debility so great that it is with much difficulty he can be moved to apply the dressing; gangrene commencing on the right heel. He lingered until the 11th, when he sank one of the most miserable objects ever beheld. Body not examined."

"Case IV.—William Butters, æt. forty, a joiner, and a very healthy man, possessing an excellent constitution, who has been always most temperate in his living, residing in Chapel-street, Stonehouse, with his wife and six children.

"On Tuesday, the 10th of August, 1824, whilst planing a piece of mahogany in the joiners' shop of his Majesty's Dock-yard at Devonport, he tore up the nail of his right ring finger by a splinter of wood. Dr Bell removed the nail on his application at the Surgery, and ordered poultices, which were continued to the finger for five days, and afterwards light dressings for three days, he, (Butters) continuing at his work during that time.

"This accident happened the more easily in consequence of the infirm state of the nails of the ring and middle fingers of the right hand, owing to a fracture of the last phalanges, produced by their being jammed between two pieces of timber in February last. He was then confined six weeks by these fractures, but suffered no unusual constitutional irritation.

"On Wednesday morning, 18th of August, whilst dressing himself, he felt shivered and unwell, but nevertheless went to the Dock-yard. Whilst there he became so ill with general disorder, rigors, and faintness, that he was obliged soon to quit the yard previous to the usual hour of departure. He applied to Dr. Bell, who remarked that his illness could not depend on the finger, which, on this day, looked healthy and granulating. Poultices were again applied to the finger, and cathartic medicines ordered.

"19*th.* His bowels had been freely opened. He was somewhat easier.

"20*th.* His fever had increased, with severe head-ache.

His hand and arm were now much inflamed; the sore felt cold and smarting, rendering the connexion, which had been before doubtful, between the local injury and the constitutional disturbance, both manifest and certain. V. S. ad ℥xxxiv. Medicam. Cathartic. cum Ant. tart. subinde. Fotus partibus affectis.

"21*st*. The blood, drawn yesterday by Mr. Dryden, buffed; fever not diminished; head-ache unsubdued. His head was now so disordered, that a sort of redness (*Photopsia*) prevailed before his eyes, and a phantom as though a piece of wood was encircled by fire—signs highly indicative of great cerebral excitement. Hand and arm very painful, much swollen, and erysipelatous. The redness appeared in patches and lines on the inner side of the arm in the course of the absorbent vessels, which were red even to the axilla. Great œdema over the whole arm. Admoveantur Hirudines xvi. temporibus.

"Repr. Mistura Cathartica.

"Sumat nocte Bol. sequent.

"℞ Pulv. Antimon. gr. vi.
Ext. Opii gr. ij. Confect. q. s. m.

"22*d*. The leeches afforded relief to his head. Symptoms as yesterday. Continuerentur Cataplasmata et Fotus.

"23*d* and 24*th*. No particular alteration.

"25*th*. The whole hand and arm still erysipelatous, and greatly swollen in an increased degree, pitting like dough on pressure, his pulse rapid and weak; strength greatly exhausted; head-ache rather lessened, but still very bad; tongue moist and clean. On the back of his right hand an obscure fluctuation was now perceptible, which Mr. Dryden opened by an incision nearly two inches in length; the cellular tissue was injected with pus.

"Habeat Ol. Ricini ℥i. statim.

"26*th*. The tension of the whole arm was lessened, and the head-ache relieved, after the opening; the redness disappearing.

"27*th*. Improving. Ol. Ricini ℥i. st.

"28*th*, 29*th*, and 30*th*. Better in every respect. Repr. Oleum. Habeat Mistur. Cathartic. pro re nata.

"*September* 2*d*. Soft dressings and light bandages were reapplied to the finger and arm, in lieu of the poultices, &c. which had been continued up to this period over the whole limb.

"8*th*. Convalescent. Owing, however, to excessive debili-

ty, and stiffness of his right hand and arm, Butters could not return to his duty in the Dock-yard until Monday, the 11th of October."

"Case VI.—Gregory Nichols, æt. forty-five, shipwright, a very tall, stout, and athletic man, generally healthy, excepting some nephritic ailments, and a pain in his right side, the result of a blow received from a fall several years ago, of which he occasionally complained. Residence—Pembroke-street, Devonport.

"On the 7th, 8th, and 9th, of September, 1824, he received sundry and slight abrasions over his left shin bone whilst employed as a labourer stowing timber near the Mast and Boat Ponds in his Majesty's naval yard, at Devonport. The weather was very hot and sultry at this time.

"On Saturday, the 11th, he did not work, but went to the Dock-yard to have his leg dressed, and was ordered a cold lotion. He confined himself to his house during the latter part of Saturday and the whole of Sunday.

"On Monday, the 13th, he performed his usual work in the Dock-yard throughout the day, although his leg had become very painful. Whilst at work he was often shivered, a feeling attributed to the cold lotion he had used. At night a pain ensued, and red lines appeared in the thigh, with tenderness in the inguinal glands; he was flushed and feverish, and had pain also in the Occiput.

"14*th.* September, (Tuesday.) Was reported sick, and visited by Dr. Bell, who immediately pronounced on the character of the disease, and ordered cataplasms and fomentations to the leg. Mr. Dryden, who saw Nichols afterwards, directed an emetic, and, after its operation, some cathartic pills and mixture, which also produced the desired effect before morning.

"15*th.* The pain had extended itself from the leg to the groin, hip, and back; the absorbents in their course exhibited a streaky or erythematous redness, which, in the language of the widow, would '*come and go,*' viz. the redness was erratic. There was a particular patch of it in the groin; and there was also considerable Œdema of the whole limb. His fever had increased. Pulse 110, and full. Venæsectio ad ℥xxxiv.

"℞ Hydr. Submur. gr. viij.
Pulv. Antimon. gr. vj.
Confect. q. s. m. f. Bol. No. ij.
"Capt. unum hac nocte et alterum mane.

"16*th*. Fever lessened; the redness of the limb scarcely apparent; the tenderness in the groin nearly gone.

"Sumat Ol. Ricini ℥j. statim.

"*Six o'clock, P. M.* Bowels relieved.—

"Reptr. Bol. anteā prescript.

"Omni sexta quaque hora.

"17*th*. Not worse; bowels open; he was totally incapable of moving the limb, which was raised for him. Cathartic mixture ordered, with tartarised antimony, every fourth hour.

"18*th*. (Saturday.) Passed a restless and a dreadful night; complains of an increased pain in the right hypochondrium: pulse 110, and small. His spirits have never flagged: he is even now confident of his recovery, although his danger is apparent.

"Admoveantur Hirudines 12 lateri dolenti. Repr. Medicam. purgantia.

"*Five o'clock, P. M.* Symptoms increased; there had come on pain and tenderness all over the abdomen with nausea. Venæsectio ad ℥xx. Syncope was produced by the bleeding, and hiccough followed, with occasional fainting. Took castor oil, and had frequent injections during the night. Twenty-four leeches were directed to the abdomen, and an anodyne draught ordered.

"19*th*. (Sunday,) *Seven o'clock, A. M.* Much worse. Leeches could not be applied on account of his restlessness. He had tumbled from one side of the bed to the other, without resting; yet he was rational. Pulse now scarcely perceptible; cold and clammy perspirations had appeared, with nausea, and increased hiccough. The warm bath, and effervescent draughts were ordered, but not used. He died rather before *ten o'clock*, on this morning."

"Sectio Cadaveris.—The body was examined eight hours after death. Emaciation trifling. Parietes covered with fat. Intestines generally inflamed, particularly about the termination of the ileum and the commencement of the cæcum, which were dark in colour. The mesentery and meso-colon were vascular with red patches, the whole being amassed in sero-purulent fluid. The right kidney was completely disorganized, and changed into a mass, like thick cream in colour and consistence. The left kidney sound. The urinary bladder adhered very firmly to the surrounding parts, and contained about six ounces of healthy urine. The

other viscera, particularly the liver, were healthy in appearance."

"Case IX.—Dr. James Bell, æt. fifty-eight, late Surgeon of his Majesty's Dock-yard at Devonport, rather stout, sometimes dyspeptic, but generally healthy.

"On the afternoon of Sunday, the 19th of September, 1824, attended the examination of Gregory Nichols's body,* and scratched his right fore finger, over the extensor tendon on the last phalanx, when he was directing a pupil how to sew up the body, with a surgeon's needle, which had been previously used for that purpose. At this time the Doctor appeared in his usual state of health, and took no particular notice of the puncture or scratch so inflicted on his finger.†

"On the following morning, September 20th, Dr. Bell attended the Surgery at the accustomed hour of nine o'clock, and complained of feeling unwell. When washing his hands he first felt a smarting in the scratch over his right fore finger; whereupon he became shivered, and impressed with an idea that he had caught the disease, then prevailing among the Mechanics of the Dock-yard, which disease had previously agitated his mind, and now made him very apprehensive for his safety. He remained, however, at the office about an hour and a-half, and by that time the rigors and general indisposition had increased in such a degree as to produce considerable alarm. Pulse 96, and full. Bowels open by an aperient, taken on the preceding evening.‡ The wound on the finger was not inflamed. He was recommended to lose blood from the arm, and to take an emetic, to both of which propositions he had a great aversion, and made insuperable objections. He went to bed, however, before twelve o'clock at noon, and endeavoured to make himself sick by irritating the fauces with his fingers, and by drinking warm water. In the course of the day, his fever had increased, and a reaction or flushing followed the rigors. Dr. Dickson, Physician to the Royal Naval Hospital, at Stonehouse, and Dr. Yonge, of Plymouth,

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* "See Case VI.

† "It may be here remarked that, in consequence of the unprecedented fatality which had lately occurred, and the untoward character which the wounds generally assumed at this time, he underwent much bodily fatigue, as well as anxiety of mind; and that in crossing the water in a boat on Saturday, to visit a patient at Torpoint, he got thoroughly wetted with rain.

‡ "The Doctor frequently took Pil. Hydr. and Ext. Colocynth. or small doses of Magnes. Sulph. to relieve his dyspeptic complaints.

were consulted. He now consented to lose about sixteen ounces of blood from the left arm, by a small orifice, and to take the subjoined Bolus:—

"℞ Hydr. Submur. gr. v.
Pulv. Ant gr. iv.
Confect. q. s. M.

which was to be followed by some of the Cathartic mixture in the morning.*

"21*st*. Passed a restless night, with an increase of fever. Pulse 130, and full; stomach very irritable; nausea great; tongue coated; bowels open; complains of pain and tenderness over his right pectoral muscle and shoulder, on which he cannot bear the least pressure; but the wound on the right fore finger is not at all inflamed.

"Repr. V. S. ad ℥xxx.

"Ordered effervescing draughts, with saline medicines, every second hour.

"*Eight o'clock, P. M.* No relief from the second bleeding. The blood was neither buffed nor cupped, the coagulum was rather firm. Speaks of a distressing pain about his sacrum and loins, with general lassitude and great weight, and evinces considerable anxiety. There still exists much soreness over the right pectoral muscle; and there is a great prostration of his muscular energies; but withal there is no headache. Pulse 130, and small.

"Reptr. Bolus, et Contr. Haust. effervesc. cum
Potassæ Nitratis gr. v. 3tiis horis.
Illinatur Linimt. Saponis in partes affectas.

"22*d*. Symptoms all aggravated. Passed a sleepless and distressing night, owing to the excruciating pain in his back, but felt relief towards morning, from profuse perspirations. Still feels pain in his right shoulder, with inability to move the arm; complains of indistinct vision, and mistakes the distance when he attempts to take any thing. Nausea continues; pulse 130, and irregular.

"Appr. Empl. Lyttæ Epigastrio
Medicament. Contr.

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* "As the medicines given to Dr. Bell, though judiciously directed, made no effectual check to the march of his disease, it is thought necessary to give a particular account, only so far as seems to be important in detail.

"23*d*. Slept a little during the night; nausea alleviated, but not gone; back-ache mitigated; pulse very irregular, and frequent; articulation difficult; thoughts confused; no pain in any part but the pectoral muscle, when pressed upon; there is no redness nor visible sign of inflammation on the skin; the scratched part of the finger is neither inflamed nor swollen. He took Camphorated Mixture, with the Nitrous Spirit of Æther, every two hours, and Wine frequently.

"Towards evening his breathing became laborious, and delirium appeared.

"Appr. Empl. Lyttæ suris et imo Colli.

"24*th*. Became perfectly insensible during the night; pulse wavering, occasionally indistinct, and imperceptible; breathing laborious; stupor and coma present; the sphincters relaxed, and the discharges passed involuntarily; profuse perspiration towards morning, when the breathing improved Took four doses of the Sulphate of Quinine (℈i.) without benefit. His deglutition was at last impeded, and a vacant stare occupied his countenance until *seven o'clock on this evening*, when he sunk without a struggle. Body not examined.

"P.S. The Sulphate of Quinine has since been ascertained by Dr. Dickson not to have been genuine."

As we have already had occasion to observe, the remarks made by our author on the above cases, and the pathological inferences which he draws, do not appear to us to be particularly pertinent, interesting, or important.

It appears to us that our author pays too little attention to the consideration of the predisposing cause, and to attribute too much etiological importance to the local injury. If in the space of ten previous years there had occurred among the same number of men, only two cases of fever from wounds, and if during the season of this disease there occurred fifteen cases of a character remarkably uniform, as appears from the above cases, it is absolutely certain that there must have been some cause of a local nature, which operated to create a common predisposition, and which conferred upon the disease its peculiar character.

The local irritation which so uniformly proved the exciting

agent in the development of this disease, can be regarded as no more important in generating the disease, than a spark of fire in the explosion of a magazine.

From the circumstance that the disease in question was exhibited by those only who suffered local injuries, and from the fact, too, that those affected by it, remained in perfect or usual health until the wound was received, we have reason to presume that the predisposition was by no means confined to those in whom the disease was thus accidentally developed.

From this, the inference is direct, that there may exist an epidemic predisposition to disease which may pass away without ever becoming developed. Indeed, we have reason to think from these and other facts, that there are certain mysterious causes, which in particular districts, and perhaps over the whole world, are constantly exerting their influence to modify the condition of those vital properties which distinguish the animate from the inanimate creation. Epidemics we know to occasionally extend, with shades of difference, not only over particular districts, and through the human family, but, with shades of difference, to the brute creation, and through every climate.

The above cases also furnish proof of the fact, that the constitutions of different individuals, who are for a long time intimately associated with each other, engaged in the same avocations, and living in the same manner, become, by a mysterious reciprocal influence, attuned to each other, as two pendulums, which vary slightly, when remote from each other, will be made to vibrate in precisely the same time, when suspended near each other, and on the same support.

With regard to the treatment of the disease in question, the reader will probably draw his own inferences from the above cases. The author appears to rely on tonic and invigorating remedies, associated with such topical applications as are calculated to invite the disease to the surface. Among these inci-

sions in the skin were highly important. But we will give our author's general conclusions in his own words:

"I believe, now, that I have enumerated a sufficient number of facts to direct the practitioner to that treatment, which will be found most proper and successful in controlling irritative fever or erysipelas excited by local injuries, either of the simplest kind or aided by a poison. The constitutional treatment will be very much the same, although the local may differ. After the maturest deliberation, which I have given to the subject, I venture, with deference, to offer the following corollaries, hoping that they will be considered as the only explanations which I can advance, respecting the origin, causes, nature, and treatment of this disease:—

"*First*—That the constitutions of these men had been rendered unusually susceptible of irritation at this time.

"*Secondly*—That diet, air, their occupations, and other circumstances, influencing animal health, had collectively operated in creating this morbid propensity.

"*Thirdly*—That the addition of an external injury, to a susceptible habit of body, formed the disease.

"*Fourthly*—That any kind of local excitement sufficed.

"*Fifthly*—That the local injuries would have proved inadequate to the causation of this disease, in persons not predisposed to excitement.

"*Sixthly*—That the disease was not confined to the Artificers of the Royal Naval Yard at Devonport, as erroneously supposed; but was recognized, in detached instances, amongst other people in the neighbourhood.

"*Seventhly*—That the disease was traumatic erysipelas of some, and the irritative inflammation of other authors.

"*Eighthly*—That its leading character was a tendency to spread, to form sloughs, or unhealthy fluids, and to leap from part to part.

"*Ninthly*—That bleeding, and other depletory measures, proved inadequate to the cure of this disease.

"*Tenthly*—That two cases of recovery arose probably from the restoration of healthy secretions, and the third from the removal of tension by incision.

"*Eleventhly*—Experience has shown that the object should be, to invite and keep the disease to the surface by local measures.

"*Twelfthly*—That the general treatment ought to be calculated to invigorate and strengthen the constitution, with

the view of expelling the aggressions of disease towards the interior."

It is to be noticed, however, that since the appearance of Dr. Butter's book, we have seen in the London Journal, a statement of the same epidemic wearing a somewhat different aspect, by Mr. Tripe, who appears also to differ in opinion from Mr. B. in relation to the mode of treatment proper to be pursued. Mr. T. warmly advocates the necessity of prompt and copious depletion, and the cases offered by him do indeed substantiate the opinion. It is to be presumed, however, that both of these gentlemen may have been correct, in regard to the particular cases from which they draw their inferences. Undoubtedly there occurred cases, though similar in the leading traits of the disease, yet so different in regard to vascular excitement, as to render both modes of treatment proper in particular cases.

The following conclusions, drawn by Mr. Tripe from the cases furnished by him in the London journal, we transcribe:

"Upon these grounds, I dissent from opinions that have been expressed, and draw the following conclusions:—

"1*st*. The two cases detailed in this paper are genuine specimens of the fatal disease which occurred at Devonport, in the autumn of last year, and which has been commonly called Dock-yard disease.

"2*d*. The symptoms attending the progress and consummation of the disease, together with the dissections, prove that it possessed a tonic and active character; and that its destructive influence was chiefly exerted through the medium of the sanguiferous system.

"3*d*. That all those means comprehended in the general term *antiphlogistic*, reguluted with promptitude and efficiency, proportionate to the activity and intensity of the symptoms, formed the treatment best calculated to relieve.

"It may, however, be objected to these inferences, that the large proportion of deaths, which are exhibited in the history that has been published, furnishes a fact in opposition to them, and proves that a tonic and stimulant plan of treatment should supersede the antiphlogistic. I would answer, that, to support such an opinion, in oposition to the evidence supplied by this

paper, it is not sufficient merely to state that twelve men, who died of this disease, had all been bled, and therefore that bleeding must be improper; but it is necessary that the history of each case should be minutely and progressively stated, so as to exhibit the real condition of the patients, linked with the treatment they respectively received. The effect of this would be to prove in what extent the antiphlogistic treatment had been satisfactorily used in all those men who died. It would also afford an opportunity of observing what resemblance (in degree as well as kind) there was between these and the case that is represented to have been cured by the opposite mode of treatment.

"The cases which have been published do not supply this *necessary sort of evidence*, and their brevity is accounted for in the Preface: it is there stated that no notes were originally taken with a view to publication; but that the relatives and friends of the deceased had been called upon to render them as accurate as possible under these circumstances; so that there is not only deficiency of matter in the relation of these cases, but considerable objection to the mode by which it was obtained. These facts deprive them of importance, and must render nugatory any attempt to convert them into a precedent for the establishment of any important point of practice.

"The subject of inquiry is not one of idle curiosity. In all scientific investigations which involve the life or happiness of man, it is essential to ascertain that the general principles which are to influence our future conduct are just and true. In medical reasoning, it does not follow, because a certain practice was unsuccessful, that therefore it was wrong: the result might arise from the ungovernable nature of the malady. The symptoms of high excitement which characterised the cases that I have detailed, from their commencement to their termination,—the evidences of inflammatory action upon the internal structures and surfaces of the body,—speak a language which cannot be misunderstood; and, if bleeding and other antiphlogistic means are not to be pursued under such circumstances, it is most important to determine the line which is to define our practice."

ART. VII.—*Introductory Observations on the general relations of Anatomy and Physiology to the Moral and Physical Sciences, delivered from the Chair of Anatomy in the Jefferson Medical College, Philadelphia, October,* 1825.

GENTLEMEN,

I HAVE the honour to meet you at this time for the purpose of making a few remarks introductory to a course of Anatomical instruction. I deem it altogether unnecessary to vindicate the relative importance of our subject, by invidiously comparing it with the collateral branches of medical science. At the present day no one is so empyrical as to assert, that a correct knowledge of the structure of the human frame is not necessary to a rational understanding and treatment of its diseases. You are probably already prepared to enter upon the study of Anatomy, I will not say as the most important, but certainly as the fundamental part of medical science.

I might, perhaps, enhance the value which you attach to our subject, by dwelling upon the relations which it bears to Surgery, Pathology, and Therapeutics. This, however, is the business of our whole course, and let our panegyric upon its utility in these respects be the earnestness with which we mutually pursue it. To eulogize a science of which no one thinks lightly, were an easy task, but to exhibit every part of it in such a manner as to excite an interest adequate to its importance, is a duty to which I look forward with some solicitude.

There is one aspect of our subject, however, which, by those who pursue it professionally, is often unobserved. I mean that which it presents to the general scholar, whose comprehensive view embraces the whole circle of the natural and moral sciences, appreciating the symmetry and beauty of each part, in relation to the grand designs of creative wisdom. Such a contemplation of the science, by determining its relative importance, divests the mind of any undue par-

tialities, and prepares us to enter upon our chosen pursuits with liberal views and a just estimate of the labours of others. He, whose partial observation is confined to one department of science, can no more appreciate the harmony which pervades the whole, than the humble artist, who shapes an individual stone, can comprehend the beauty and grandeur of architectural design. The highest end of all science, and the sublimest employment of man, is the contemplation of the wisdom and benevolence of the Creator, so dimly seen through the clouds and darkness which shroud his spiritual existence, as they appear through the lucid veil of the material world. To this end we must look abroad through nature, not only to the range of planets, suns, and systems, but to the revolutions of atoms, and must occasionally call home our excursive thought, to a contemplation of the structure and functions of its own dwelling place.

But this extension of our observation, though amply, is not alone rewarded by intellectual enjoyment. Such is the correspondence and adaptation of one class of scientific principles to another, that analogy is one of the richest sources whence we derive our materials of induction.

To resume our illustration, the artist who contemplates an incomplete specimen of ancient architecture, having determined a part of its outline and general design, is enabled to supply the deficiencies by rules of symmetry and proportion. So the principles which prevail in one department of science, when once determined upon correct logical criteria, suggest, in other sciences, principles exhibiting a general correspondence. The most important innovation which has been made in Physiology is that which resulted from the analogy of physical properties and laws, suggesting corresponding principles as the elements of the functions.

But where shall we locate the science of organization and life, since so much depends upon referring it to its proper place?

The materials of the sciences exhibit themselves to our

view in three natural groups. The first consist of those which in *physics* are the subjects of inquiry, the second *physiological*, and the third *moral* phenomena. Matter, life, and mind, are the general subjects which severally occupy these departments. The science of life, then, occupies the intermedium between the physical and moral sciences. It furnishes the middle gradations in the climax of creation, the middle rounds in the ladder, whose base rests on the material world, and whose top reaches to heaven.

The term Physiology, I would so employ, as to embrace, not only the particular subject of our inquiries, but the whole range of animated nature. Let us first notice its relations to the physical sciences, and finally to those which treat of the moral and intellectual principle.

In one sense, the whole material world may be said to possess life. Every species of matter exists in its present state, and exhibits its characteristic properties, by virtue of certain principles, which, from the time of creation, were breathed into its elements. Neither its more gross nor its most sublimated forms, are ever exempt from their controul. Atoms and worlds move alike obedient to their influence. From the sun that wheels in his splendour, to the mote that floats on his beams, there moves not a particle that does not receive its impulse from the same unseen, universal power. Were these principles of physical life for an instant withheld, all nature would revert to its primitive chaos. In the language of poetry, but with philosophic precision, we might predict that

> "Earth would unbalanced from her orbit fly,
> Planets and suns run lawless through the sky,
> The ruling angels from their spheres be hurled,
> Being on being wrecked, and world on world."

The principles of life actuate their material residence only for a time. The contrast which results from their occasional absence, and from the transition of the vital frame to its physical condition, renders the phenomena of animal life appreciа-

ble and remarkable. When we see the organs of the human frame at one moment inspired with vitality and intelligence, and at the next dissolving into apparent nothingness, the observation of the most careless is attracted and the dullest mind is prompted to inquiry.

The physical dissolution of matter, however, we can never witness. Though transmigrating from one sensible form to another, and assuming a thousand protean shapes, it is still obedient to some of those immutable laws to which it was subjected at the beginning. Whether it obtrude itself upon our senses in a solid and determinate form, or flow in liquid streams, or evade the sight and touch in its æriform subtilty, it is still either tangible, ponderable, cohesive, or elastic. When once the physical constitution of matter becomes the subject of our inquiries, the mind is naturally prompted to seek for the causes of the phenomena which occur around, and not only to trace the proximate steps in the series, but to investigate the primal or efficient power which gives the impulse transmitted through the whole; and not satisfied with the relation of mere antecedence and consequence, to determine the *essential* relation of cause and effect. These were the objects which the earlier cultivators of science proposed to themselves, and in the accomplishment of them, they aspired to place the human mind in a most exalted relation to the designs of the Creator. By determining the essential and necessary intercourse which exists between events which are in the relation to each other of cause and effect, they expected to elevate us from the humble employment of merely recording and arranging the phenomena of nature, to a participation in the intelligence of the Omniscient Being, who foresees and orders all. The degree of knowledge to which they aspired would, indeed, have enabled them to predict the train of events which should result from every conceivable contingency, and that without the necessity of resorting to experimental observation; thus giving a prophetic, as well as retrospective scrutiny, to our scientific inquiries. To attain to

this acme of intelligence, to rear this intellectual Babel, the utmost efforts of the human mind were for centuries exerted. The result was a confusion of speculative systems and a jargon of words. No determinate principles were established, each began, independently, upon his own foundation, and no one continued and completed the labours of another. The time, however, at length arrived, when the genius of one man, by the instrumentality of a single truth, was to overthrow the incongruous monument of mental labour, which had been so long accumulating.

From the creation to the present time, there is but one era in the moral history of man of equal moment with that which is marked by the introduction of the Baconian philosophy. The author of the inductive logic discovered, and clearly demonstrated, that the efforts of the human mind had, till then, been almost entirely lost upon objects which, from their nature, must be for ever unattainable. That the refined speculations in relation to the primal cause and the essential nature of causation, instead of elevating our minds to a conception of the plans of creative wisdom, only degraded the understanding, by conducting it from the sphere which its powers were adapted, and for which they were designed. But this great man was not content with merely dissipating error. He both fixed the fundamental truths from which we are to commence our inquiries, and determined the principles by which they are to be conducted. He so circumscribed and defined the field of philosophic research, as to concentrate our minds upon those subjects alone, which are capable of being penetrated and illuminated. He and his followers have taught, that matter is, from the creation, endued with certain properties or powers, the essential nature of which it is impossible for us to know; that these properties are always exercised in a uniform manner, and that by carefully noting their habits of action, we determine the laws by which their exercise is controuled. Thus, every particle of matter is observed to have a perpetual tendency to fall toward the centre of the

earth. By the analytic method of reasoning, as that is called which was formerly employed, philosophers would have sought to develope the essential nature of this phenomenon, the immediate cause which draws the falling body towards the earth's centre, and then to determine, *a priori*, the precise effect which it should produce under every possible circumstance which can influence the condition of matter. It is obvious that this is commencing with general principles, and ending with their application to facts. Newton, however, a disciple worthy of the immortal reformer, guided by inductive principles, from observing the fall of an apple, was led to determine the laws which controul the revolutions of planets, and maintain harmony of systems, and yet was as far from a conception of the real nature of the first impulsive cause as the untutored savage, who looks on the heavens as but a spangled canopy.

This intellectual conquest of worlds was accomplished, not by the rapid advances of the imagination, but by the patient and toilsome accumulation of facts till they became sufficiently numerous to illustrate principles. By observing the different degrees of influence which were exerted upon bodies at different distances from the earth's surface, he ascertained that the attractive power diminished in a uniform ratio, and that it was always inversely as the square of the distance.

From the above observations it is apparent, that the proper object of science is not to prescribe, nor even to anticipate the laws by which Omnipotence is pleased to exercise his power in our presence; but rather carefully to transcribe them from the ample page of nature which is spread before us.

No one who feels an interest in the progress of the human mind, can look back through so many centuries of fruitless research, or contemplate such a waste of genius and intellectual labour, without forming a sublime conception of the moral exaltation to which we should have now attained, had the inductive philosophy been known to the ancients. We

are not, however, to regard these principles as the fortuitous discovery of individual genius, for although Bacon anticipated his cotemporaries in relation to them, their revelation was the necessary result of a train of events which began with the beginning of thought. It is impossible that human intellect should have developed these truths at a much earlier period, or if revealed, that they should have been justly appreciated; and equally impossible that they should have remained hidden to a much later time. Progressive series of circumstances had been for a long time converging towards this focus.

The human mind had become wearied with scholastic perplexities: and intuitively convinced of their inutility. Facts had accumulated which could not be forced into an accordance with hypotheses; and the spontaneous synthetic association of these data, had led to conclusions subversive of long acknowledged principles.

The art of printing, had not only contributed greatly to the diffusion of learning, but had combined the efforts of philosophers, and rendered the employment of some uniform mode of ratiocination both desirable and necessary. But far beyond the united influence of all these circumstances, was that of the restoration of the primitive truths of christianity, not only redeeming man from his state of moral depravity, but also contributing to rescue him from intellectual degradation. Together with the sublimest revealed truths, the christian dispensation exhibits a system of ethics, which becomes more perfect the more thoroughly it is investigated, and probably only appears defective, in proportion as it is not understood. As merely a rational system, the christian religion anticipated the advance of human learning, we may at least say, for more than eighteen hundred years. Whatever exercises the human mind in contemplation of truth, qualifies it to recognise the same principle in other departments, however diverse they may at first view appear. Such is the pervasive nature of this attribute of deity, that wherever it

has established a radiant point, nothing can insolate its influence. Its light is propagated from one subject of thought to another, till every department of science becomes in some measure assimilated.

Though the limits which I have prescribed to myself will not permit me to dwell upon this interesting subject, I will hazard the assertion that as nearly all which is excellent in morals, so, much that is useful in jurisprudence, in political economy, and I will even say in philosophy generally, emanated directly or indirectly from the Star of Bethlehem. I will not deny, however, that the influence is reciprocal, and that the truths of christianity are elucidated by the truths of nature. The history of eighteen centuries past is replete with facts illustrative of this position.

But if mankind speculated so long unprofitably in relation to the phenomena of material nature, is it to be supposed that the more sublimated principles of life should be developed by their ill directed efforts? In this department of science the order of inquiry was still more remarkably inverted. In the physical sciences numerous facts obtruded themselves upon their notice, and even before the principles controuling their employment were deduced, they had acquired an influence of which the mind was unconscious. The more hypotheses were extended and applied to particulars, the more opposed they became to the evidence of the senses. In the science of life, however, there was not that opportunity for the exposition of error. Facts were less obvious, and the acquisition of them required a degree of zeal and perseverance, which nothing but a just appreciation of their importance could prompt and maintain. The obvious phenomena of life, they sought to bring under the same general principles, to the length and breadth of which, the physical sciences had been reduced. The opinions which resulted were so far, even from rational conjecture, as to appear, at this time, ridiculous and contemptible, and altogether unworthy of the human understanding. The slow progress which was made

by the ancients in the acquisition of anatomical facts, even after the healing art had become a distinct object of pursuit, is truly astonishing. The anatomy of Hippocrates was almost confined to the bones. From his time, centuries elapsed before any adequate knowledge was acquired, even in relation to those structures which are easily demonstrable. Scarcely any thing was known of the general structure of the brain and nerves, till the time of Herophilus and Erasistratus, of the school of Alexandria. A knowledge of the structure and relations of the muscular system was of still later acquisition. In regard to the organization of the heart and blood-vessels, the observation of two thousand years had not accumulated data sufficient to demonstrate what to us appears almost self-evident. We can never cease to wonder that the circulation of the blood, a fundamental circumstance in all our physiological inquiries, should have eluded observation, till demonstrated by Harvey, about two hundred years since. It is a familiar fact that the ancients, in theory, resolved all material objects into four elements, fire, air, earth and water. From the various modifications and combinations of these, they supposed every phenomenon to result. The same principle, or something corresponding to it, was employed in their speculations concerning life. The organized frame they regarded as constituted of earth and water, pervaded by a peculiar air or spirit, and warmed and animated by a modification of fire.

In the opinion of the earlier anatomists, the brain itself was a mere mass of earth and water, acted upon by an ethereal fire, of the same nature as the elements of the stars, which resided in the left ventricle of the heart, and which was prevented from consuming at once its own habitation, by the constant inhalation of air by the lungs. The pulsation of the arteries they attributed to the motive principle of the air or spirit which they were supposed to contain. The blood, they imagined to be confined to the veins and the right side of the heart, flowing from the latter receptacle during the day,

and returning to it at night.—The opinions of the ancients in relation to organization and life, are well illustrated in the story of Prometheus, who, having made an image of the human frame from clay, presumptuously stole fire from heaven to kindle into life the work of his hands. That a sublimated and ethereal heat should be supposed the ultimate principle of life, is not surprising, since warmth being always present in most living beings, and regarded as the unequivocal evidence of life, comes to be unconsciously associated and almost identified with it. This idea which, however, must be rejected from science, furnishes the imagination with a metaphor which is appropriate and expressive; "the lamp of life," "the vital spark," are expressions with which we often meet. In the language of poetry the figure is particularly beautiful.

Othello, when about to commit the last act of cruel jealousy, is very naturally made thus to personify the light, which shone on the beautiful face of Desdemona. "If I quench thee, thou flaming minister, I can again thy former light restore; but once put out thine, thou cunning'st pattern of excelling nature, I know not where is the Promethean heat that can thy life relume."

As anatomists became more acquainted with the complicated mechanism of the human frame, and witnessed the wonderful harmony which associates the different parts, this primitive idea of life became obviously inadequate. The precision with which each organ is observed to discharge its office in relation to the whole; the promptitude with which the powers of life rally to repulse the encroachments of disease, as if anticipating injury; the manner in which the defect resulting from the interruption of one function is obviated by the substitution of another, as if by provident design; suggested the belief that life is an intelligent, and spiritual principle, infused into the system, and which, with an unwearied circumspection, surveys and controuls the whole vital apparatus.

This idea of life, although at first ridiculous by being asso-

ciated with the wild speculations of the earlier anatomists, became a more rational assumption, when qualified by an extensive knowledge of the functions, and finally a sacred article of belief, when associated with the truths of revealed religion. The Phusis of Hippocrates, the Archeus of Van Helmont, the Anima of Stahl, the Vis Medicatrix Naturæ of later writers, and the vital principle of the present day, are essentially the same.

Let it not be supposed, from what I am about to advance, that I would array the deductions of science against the revealed principles of christianity. Truth can never be divided against itself,—but whether written in the book of nature, communicated by inspiration, or uttered in thunders from Sinai, it is the same immutable principle.—Revelation was never intended directly to facilitate the acquisition of those scientific truths which are within the reach of our natural powers; but rather to unfold to us the otherwise inconceivable relation existing between God and man. In displaying the moral condition of man, however, it was impossible not to make use of the language and ideas, which then obtained, in relation to such material objects as are the subjects of scientific inquiry. It was impossible that any abstract and peculiar language should have been, at once, employed in illustration of the divine truths. It was only by the metaphorical use of words, in which men at that time were accustomed to think, that any intelligible communication could be made. Had inspiration anticipated the progress of the sciences, and instead of employing illustrations which were conformable to the degree of knowledge then prevailing, had alluded to truths which the human mind has since arrived at, the whole would have been unintelligible. Had the language employed been literally and scientifically true, the divine mission could never have accomplished its end, without working greater miracles in the human understanding than were wrought in material nature. The language employed in the scriptures, therefore, in relation to matters of science, is only to be re-

garded as a necessary conformity to the state of human learning at that time, and should by no means be opposed to the progress of philosophic inquiry. Those of its friends, who have extended its signification beyond the limits which contemporary circumstances assign to it, have perhaps prejudiced the cause of religion more than those who have avowed their hostility to its principles. By assuming grounds which the progress of science has compelled them to abandon, they have given their opponents occasion for exultation, and favoured the belief that the citadel itself is but an illusion which must be dissipated by the increasing light of natural truth. It is undoubtedly in a degree from this mistaken zeal, on the part of the friends of revealed truth, that the pursuits of science so often and so unnecessarily lead to scepticism.

Our investigations in relation to organization and life can never interfere with the fundamental principles of christian faith, while we admit the existence of an immaterial, intellectual principle, which survives the dissolution of matter, the decomposition of the human frame, and I will even say, the extinction of life itself.

In the common acceptation, life belongs to all those substances which are organized. Such as are exclusively under the controul of the *physical laws*, of which I have spoken, are *homogeneous* in their structure, every component particle being perfect in itself; thus a piece of marble exhibits the same properties, whether it be in one mass, or reduced to atoms. Organized beings, however, are composed of dissimilar parts, all of which conspire to perform certain offices essential to the existence of the individual to which they belong.

Thus an animal is composed of bones, muscles, nerves, the organs of sense, &c. the existence of each of which is dependant upon the integrity of all the others. Unorganized bodies increase by the addition to their external surface of similar particles. They do not therefore grow, but may be said to accumulate. Organized beings, on the other hand, perform an active and interesting part, in relation to their own structure,

for they possess an apparatus which elects the proper materials from surrounding substances, and converts them into the different component textures. This process is denominated assimilation.

I have already spoken of the properties and laws which controul inanimate matter. Haller was the first who suggested the existence of corresponding properties as the elements of life. Him we are to regard as the great author of physiological induction. Bichat improved upon the suggestions of Haller. He taught that, to the physical properties, which belong to the organs of animals, as for instance, the resistance of the bones, the tenacity and flexibility of the ligaments, the elasticity of the cartilages, &c. so necessary to the mechanism of the human frame, there are superadded certain other peculiar properties, which bear the same relation to the phenomena of life, that the former do to those of inanimate matter. These properties are *sensibility* and *contractility*, to some modification or combination of which, all the results which the vital organs exhibit, may be referred as their ultimate cause. The essential nature of these principles is beyond the reach of our faculties, and hence, though we resolve life into elementary principles, our conception of the agency of the great first cause is, by this, no way degraded. The vital properties exist in their simplest form in the vegetable kingdom, the individuals of which exhibit no other functions but such as are immediately concerned in the organization and growth of their own structure. Thus a plant lives within itself and enjoys no perception of surrounding objects. As we ascend the scale of beings, however, we observe life to consist in a more exalted class of phenomena. In the animal system it controuls not only the internal operations, but, through organs adapted to this end, establishes a most interesting relation with surrounding objects. By means of the locomotive powers, and the organs of the senses, animals move from place to place, take cognizance of whatever influences their condition, and seek or shun it, as it gives pleasure

or pain. In the human frame, thus organized and qualified for its reception by the vital properties, the rational and moral principle assumes its temporary abode. I am aware that it is thought necessary, particularly by those who advocate the immateriality of the soul from the light of nature, to identify life with the immortal principle. The ingenuous arguments of bishop Butler, however, answer the objections which may be raised against the immortality of man's sovereign reason, no more conclusively than they do those which may be urged against the perpetual existence of the humblest plant. The occasion will not permit me to dilate upon this subject, but does not the analogy of material nature which I have already adduced, rather suggest that the vital condition of matter is dependant on certain properties with which it is endued, and that life is the manifestation of the phenomena which result from them? Let every one scrutinize the operations of his own mind, in relation to his conception of life, and he will find it impossible to think of it, but as associated with organization. Of the property of gravitation we can only conceive as belonging to matter; and if life be abstracted from organization, who can conceive of its existence?

Of a moral and intellectual principle, however, we can conceive as being independent of a material basis. It is not manifested to us through the medium of organs alone; the mind's eye is turned inwards upon itself, and its operations are the subjects of consciousness and reflection. It is only, however, through a living and organized being that the mind can hold intercourse with material objects. Life, then, is the tie which binds together the spiritual and the material world; the principle which qualifies matter to become the residence of the soul. Through the organs of sense, as through obscured windows, the imprisoned spirit takes a limited survey of surrounding objects. How sublime is the idea, how exalting the hope that, when the mind has cast off its material impediments, we shall contemplate with a direct and intense perception, the benevolence, the wisdom and the power of

the Creator, as displayed throughout the universe. In the language of a familiar author:

> "Life makes the soul dependant on the dust,
> Death gives her wings, to mount above the spheres,
> Through chinks, styled organs, dim life peeps at light,
> Death bursts the involving cloud, and all is day."

ART. VIII.— *Observations on Fractures of the Leg, with an account of a new Support.* By NATHAN SMITH, M. D. &c.

THE support for a fractured leg, consists of one piece. It may be made of almost any kind of wood, but bass-wood, or white pine, is the best. One piece of sufficient size is better, but if one of sufficient thickness cannot be conveniently procured, two slips of plank, each two inches in thickness, may be glued together, and then worked into the proper shape. The support should be excavated by the tool in such a form as to receive one-half of the leg, and the upper surface of the support should be adapted to the lower half, so as to divide the pressure as equally as possible over the whole lower surface of the limb. The only covering for the support, or that which intervenes between the leg and the support, should be a piece of flannel, and there should never, in case of fractured limb, intervene any kind of bandage between the support and the limb, as such bandaging can never be useful, but may be, and often is, very injurious. In case of simple fracture of the leg, the support should be applied to the out-side of the limb, as that is the most convenient for the patient; but in case of compound fracture, and where the wound happens to be on the outside of the limb, the support should be applied to the inside of the leg, and the patient may lie on his side, or on his back, or he may change from one position to another, which is always a relief; or he may lay it on the outside, as the support will preserve it in its proper situation, though it should be on the upper side, provided the limb be placed on an even pillow.

As there is no occasion for hurry in applying the support, it being equally well for the patient, were it applied the day after the injury, as immediately, the surgeon may take an exact measurement of the limb, and thus the support be made to fit accurately.

The surgeon, in the mean time, should straighten the limb, and lay it on the surface of the bed or pillow, to rest until he is ready to apply his dressings. When every thing is prepared, the limb is to be taken up by two persons, one at the knee, and the other at the foot, who should raise it from the bed, and extend the limb, keeping the knee bent, while the surgeon adjusts the fractured bone. The limb should then be placed in the support, and as the support invests the leg, and confines the foot, the surgeon may embrace with his hands and support the ancle, while an assistant makes counter-extension by the knee; he will thus extend the limb, while a third person binds it to the support, by strips of flannel, after the manner of the common tailed-bandage, as it is termed. This being done, the limb may be laid in the bed, with the leg flexed upon the thigh, and if the support be well adapted to the shape of the limb, it will not produce any uneasiness from pressure. But as the support may not fit the limb exactly, and as it may happen that the limb may swell, and make the bandages which bind the support to the limb too tight, they should be examined each day successively for the first two or three days, in order to rectify or remove any thing wrong in the dressings.

This method of treating a fractured leg has several advantages over any method which I have seen recommended. In the first place, by drawing a single pin, we may turn off the bandage, examine the limb, and make any application to it, or dress a wound, without deranging the bone in the least, or giving any pain to the patient. The bandage being applied over the support which covers one-half the limb, it cannot produce injurious pressure, or obstruct the circulation. The patient may bend or extend the limb at pleasure, be

helped, or help himself out of the bed, and set in a chair, without injury or producing pain, which is a very great convenience. Confinement on the back, twenty or thirty days, is no small suffering.

There have been several attempts, by ingenious contrivances to apply permanent extension to a fractured leg, but so far as I have witnessed their effects, they have been uniformly bad. In some cases, they have produced the very effects which they were intended to obviate; and in every instance, have been a source of pain, irritation and unnecessary confinement.

I believe that permanent extension is never necessary in fracture of the leg. I have used the support recommended above, more than twenty years, during which time, I have attended many cases of fractured leg; and though I have never tried means to produce permanent extension, I have never had but one leg shortened in the least, and that, though a compound fracture was not shortened half an inch, and the shape of the limb was quite perfect.

I have stated above, that there should be no bandage between the limb and the support. This practice, I apprehend, has done more harm than surgeons are aware. Every surgeon of fifty years of age, must recollect with what alarm a compound fracture was formerly viewed by the surgeon: and both the surgeon and the patient often realised all the suffering which was predicted. As I have had many cases of compound fracture, since I discontinued the use of constrictive bandages, and as I have never had more trouble with them, than what would arise from a simple wound, added to a fracture, (that is, the mere inconvenience of dressing the wound,) I have thought that the bandages, and short or long splints applied in such cases produced all the mischief.

There is another work of supererogation, in cases of fracture, which is still continued in this country, and which is, as I believe, productive of much mischief—that is, the use of what may be called the counter-splint. This is applied to keep the

ends of the fractured bone on a level with each other. A little reflection, will, I think, convince any one, that they can have no such effect. So long as the limb is supported on one side, and carefully bandaged to the support, in such manner, as that the limb shall lie on the support on one side and be embraced by the bandage on the other; the bone will be kept in its place with more certainty, than it could be by the counter-splints, which, like the bandaging, can effect nothing but injurious pressure.

There is yet another advantage claimed by this apparatus, over those generally used, viz. that the limb may be flexed or extended, at the pleasure of the patient, which affords great relief; as one position continued for a length of time, will ivariably give considerable uneasiness, whatever the position may be: there is no position, however so painful, as perfect extension or a great degree of flexion.

ART. IX.—*Case of Diseased Spleen, communicated in a Letter to one of the Editors.* By DR. D. E. DEMING, of Hinesburg, Vermont.

THE following case, which was communicated in a letter to one of the editors, by a respectable and intelligent gentleman, we do not insert as exhibiting any thing unique in regard to the morbid phenomena, or the magnitude of the diseased viscus, although indeed it is one of the most re-remarkable in this respect on record. Morgagni relates a case in which the weight of the diseased spleen was eight and a-half pounds, and other authors speak of them still larger. The circumstance which confers value upon the case, is the intelligent account which is given of the pathological associations which the disease exhibited. The pathology of the spleen as well as its physiology, is perhaps less known than that of any other viscus, and it is only by a careful and minute attention to all the accompaning symptoms that we can hope to establish any thing determinate in regard to it. The craving and unsatisfied appetite of the

patient in the present case, would indicate the necessity of the spleen as subservient to digestion. Our readers, however, will draw their own inferences.—EDITOR.

DEAR SIR,

THE following is a history of a case of enlarged spleen, and of the patient's early life, as nearly as can be ascertained, which is submitted for your disposal.

Mrs. Clark was born of healthy parents, free from hereditary disease, and from infancy to the age of sixteen, she was healthy and active. About this time she was violently attacked with bilious cholic, which reduced her extremely low, and her health was ever after precarious, she being subject to periodical head-ache and cough. At the age of twenty she subjected herself to a sedentary life—it proving detrimental to her health she relinquished it at the age of twenty-three, at which time she was married. The menses were profuse from their commencement until within six or eight months of her death; sometimes increasing to menorrhagia and always attended with pain. She was tall, slender and emaciated. During the winter of eighteen hundred and twenty-two, she became unusually ill—her symptoms indicating an approach of phthisis pulmonalis. Epispastics, expectorants, and other remedies were resorted to, which abated the violence of the complaint. About this time she discovered a tumour in the left hypocondrium of the size of a walnut. Several months after this she became alarmed at its rapid growth, and made her case known. Dr. Goodyear for the first time was called in, and from him I have obtained the history of her condition at that time. Says the Doctor, "on examination I found a tumour nearly of the size of a child's head, moveable and distinct from the surrounding viscera, somewhat oblong, with a smooth and uniform surface except on the anterior part, which was uneven and indented,—without pain or tenderness. Her appetite was good, and she could employ herself about light work through the day. Pulse

from eighty to eighty-five, round and thrilling, with a peculiar protraction of the systole of the heart." There followed as the disease advanced, palpitation of the heart, lassitude, fatigue on the most trifling exercise, debility, emaciation, &c. The secretion of urine was much increased; through the day, however, she evacuated but little, in consequence of which the abdomen became much distended in the evening, which rendered respiration quite laborious, but a collapse always took place before morning by means of frequent discharges of large quantities of urine during the night. Her thirst for water, acids, tea, &c. was insatiable. She was in the habitual use of opium to procure sleep and rest, which at times produced nausea. Medicine produced no apparent effects. Digitalis and ammoniated tincture of guac for a time were freely taken, and a few other medicines were tried, but all proved useless. Opium was the only remedy from which she found any relief. The digestive functions remained unimpaired, the bowels were sufficiently active, and the stools appeared healthy. Her appetite for solid food became rapacious—but food satisfied no longer than she was receiving it, probably in a very great measure on account of a kind of faintness, which for the most part of the time she experienced. The rapid growth of the tumour, the peculiar sensation it imparted to the touch, the size of it in the commencement, and the symptoms generally, which were so different from what is common in cases of diseased spleen, rendered it very difficult even to conjecture its local condition, or of what composed. A number of physicians were consulted—some supposed the tumour to be situated in the cellular substance of the abdomen, external to the peritoneum—others, that it was an extra-uterine conception, and others that it was a sarcomatous substance, situated in the cavity of the abdomen, but involving no important viscera—consequently no regular course of treatment was adopted in her case.—The enlargement of the abdomen and some peculiar longings were symptoms, very much resembling the last stages of pregnancy, and she with many of her friends for a time indulged the

hope that she was pregnant. But as her complaint continued to advance, and as every effort for relief proved ineffectual, she became more and more anxious—her mind was continually in search of new and untried remedies which were no sooner tried than abandoned. In this condition of anxiety and disappointment, the unhappy sufferer passed between two and three years. Six or eight months previous to her decease she ceased to menstruate, after which her decline became more rapid. In the last stage of her disease she had several attacks of acute pain in the right hypochondrium, which usually came on suddenly while evacuating urine, and gradually subsided. The pulse became quick and feeble, with œdmatous extremities, and difficult breathing, from which she obtained the most relief by riding in a carriage—at length she found no relief except in an erect posture in a current of fresh air. In this most distressing condition she remained but a short time and expired 12th June, 1824, thirty-one years of age. On making an incision longitudinally, and another transversely through the peritoneum, a small quantity of serous fluid was discharged, and the spleen was presented to view, occupying the whole of the left hypochondriac region of the upper and anterior part of the right and the left lateral and anterior portions of the umbilical, lumbar and hypogastric regions.—The superior extremity lying closely in contact with the liver, and diaphragm was somewhat pointed, and fimbriated, and the great pressure it produced upon the diaphragm and lungs, was the probable cause of the difficulty in respiration.—The inferior extremity being less compressed, was more massy, and terminated more abruptly. Its colour was rather darker than natural, the surface was of a polished smooth structure, except where the blood-vessels entered, and on that portion of the superior extremity which was firmly attached to the diaphragm and linings of the ribs by membranous adhesions—The splemic artery and veins were in size little inferior to the aorta and vena cava—the branches of the vena porta on the left side were also very considerably enlarged. It was

fourteen inches in length, eight in width, six in thickness, and its weight eight pounds and seven ounces—its whole structure appeared to be slightly indurated.

The left lobe of the liver exhibited marks of chronic inflammation. It was enlarged and so firmly adherent to the side, that it was much lacerated in detaching it.—The weight of this viscus was seven pounds and six ounces—the other abdominal viscera appeared healthy. The thorax was not opened. It may be proper to remark that the patient had had no children. She was never attacked with intermittent nor with remittent, neither did she ever experience any pain or tenderness to the touch, especially in the left side—the tumour never gave any uneasiness except to the mind, and from its bulk, pressing upon the lungs—the patient could rest with equal ease on either side.

ART. X.—*Case of Fracture of the Os Femoris, with a Wound of the Popliteal Artery, followed by Gangrene of the Leg, which rendered Amputation of the Thigh necessary for the preservation of Life. Communicated in a Letter to one of the Editors.* By SAMUEL C. GWINNER, M. D. of Easton, Pennsylvania.

ON the first of November of the present year, A. V——, aged about thirty-five years, whilst assisting in putting a hogshead of cyder on a wagon, received a severe blow on the left thigh from the falling of the hogshead, which produced a fracture of that bone at its lower part. A messenger was immediately sent for the family physician; in the mean time the man was conveyed home the distance of about a mile. On arrival of the physician in about an hour after the accident, the thigh on examination was found to be enormously swelled and tense; a wound was discovered an inch or more in length, penetrating through the skin and cellular membrane only, at the lower and outer part of the limb. No crepitus could be heard, but the deformity at this part, to-

gether with the shortening of the thigh, plainly indicated the existence of a fracture.

The pain was excessive, which was referred by the patient to the foot and ancle, more particularly, accompanied with symptoms of faintness or exhaustion. The limb was immediately placed in the long splints of Desault, and sufficient extension and counter-extension made merely to support it, and counteract the involuntary twitchings of the muscles. An evaporating lotion was also used to the thigh.

Whilst applying the apparatus it was ascertained that the foot and lower part of the leg were unusually cold and void of all sensibility to the touch, which attracted more particular attention in a day or two after. These symptoms, however, did not excite much alarm in the mind of the medical attendant at the time, as he imagined they were caused by the pressure of extravasated blood obstructing the free circulation through the femoral artery—that the want of sensibility was owing to the same cause, viz. pressure on the nerves; the extravasated blood he supposed came from the division of a number of branches of the femoral profunda, &c.

The above symptoms continued till the eighth day with little variation, except that the tumefaction of the thigh had somewhat lessened, with a diminution of pain; the foot and ancle remained the same. Thus far the particulars of the case were related to me by the attending physician. Being in the neighbourhood, I was now requested to visit the patient. The coldness and want of sensibility continuing, with a slight purplish appearance on the extremities of the toes, and vesication on the outer part of the leg, just above the ancle, too plainly indicating that gangrene was about to commence. I gave it as my decided opinion that the main artery was injured at the time of the accident; indeed the sudden and enormous swelling of the limb, together with the symptoms already mentioned, satisfied me that they could proceed from no other cause. I had little difficulty in convincing my colleague as to the probability of the fact. He now became

extremely anxious about the welfare of his patient, as he clearly saw the dangerous situation in which he was placed. He invited several of the most respectable practitioners in the neighbourhood to see him, to devise the best means for his ultimate good.

On the 14th, a consultation was held; from the 8th to this day, the gangrene had gradually and slowly increased, but had not extended beyond the cold and insensible parts, on which, however, several other vesications appeared. The toes had become of a darker colour, the skin covering them was shrivelled and dry, and detached from the parts beneath. There was a unanimity of opinion as to the probability of the main artery being wounded, and the necessity of an operation. In consequence, however, of his general health being as yet undisturbed, it was determined to do nothing for the present, in the hope that the tumefaction of the thigh would continue to abate (as it had diminished very considerably for the last four or five days) and thereby render amputation more easy and successful. The patient was apprised of his critical situation; he calmly and deliberately replied that he had made up his mind to submit to the operation, provided it became necessary for the preservation of life.

It was agreed that we would meet again on the 17th; in the meanwhile the patient was to be very closely watched, and in case the mortification should be disposed to spread rapidly, or his constitution suffer, the operation should be performed as soon as circumstances would admit. On the 15th he experienced considerable pain in the leg, accompanied with febrile symptoms, and continued during the day, but left him sometime in the night. In the evening of the 16th I visited him, and found him almost free from pain. The gangrene, however, had made considerable progress, having nearly reached as far as the knee. The toes have become almost black, and the leg has a livid and mottled appearance. Heretofore he has suffered but little constitutional disturbance; the pulse has now become more quick and fre-

quent; skin is hot and dry, with restlessness and anxiety; he complains of no pain at the seat of fracture, the swelling of the thigh has diminished a good deal since the 14th. He was seen this day by the attending physician, who directed for him the Dovers powder to be taken at bedtime to procure sleep.

According to agreement, the consultants met again on the 17th, at ten o'clock in the morning. The patient has been very restless during the night, having obtained little or no sleep; the irritability of the system increases; the pulse has risen to one hundred and twenty per minute; complains of being weaker than usual; his appetite has failed him, and he is evidently sinking; gangrene still progressing. The patient having made up his mind to submit, the thigh was amputated without delay. He bore the operation remarkably well, but was a good deal exhausted. As was anticipated, we found the muscles much bruised, swollen and discoloured, so as to excite apprehension respecting his ultimate recovery. After giving the necessary instructions to the attendants, we left him, with the promise that one of the medical gentlemen would return and remain with him that night. On the 18th report states that the patient had a very restless night, talked almost incessantly, accompanied with frequent startings, which symptoms were attributed to the large opiate given him before the operation. Towards morning he became composed, and continued so during the day; took some nourishment; the stump is free from pain.

19th. Continues to improve; slept well last night, and is better in all respects.

On the 20th the stump was opened, owing to the profuse discharge of a thin serous fluid, which came through the dressings, rendering them quite stiff and unpleasant, and somewhat offensive to the patient. The lips of the flap were in contact, and had a good appearance; but as yet no union had taken place; there was some healthy looking pus on the dressings; in fact, the wound looked much better than was anticipated;

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the swelling of the thigh has also diminished very much; his appetite still improves, and the case is flattering beyond all expectation. On the following day I left the neighbourhood, and have not since heard from the patient.

Appearances on Dissection.—The popliteal artery was wounded by the extremity of the fractured bone, immediately after it perforates the triceps magnus to enter the ham. The orifice was small, and had communicated with a sac about the size of a goose egg, but now closed by a coagulum of blood which had formed in the artery more than an inch in length, opposite the wound, by this means intercepting completely the circulation through the sac and limb below, accounting in a most satisfactory manner for the cause of gangrene. The artery at this part was much thickened, and contracted to one-half its natural size; its inner coat was shrivelled or corrugated where the coagulum was situated. The blood in the sac was almost as black as ink, and completely dissolved; that in the venæ comites of the leg was similar in appearance; they were enlarged much beyond their natural size, and quite distended. The muscles of the leg had already assumed a livid or purplish hue, and no doubt in a very short time the whole limb below the wounded vessel would have been entirely deprived of vitality. That there was a partial circulation through the leg is evident, from the slowness of the mortification; but it was chiefly through the deep seated vessels, inasmuch as the cutaneous veins had entirely collapsed, and could never be seen.

I have endeavoured to give you a plain statement of the facts of this interesting case, as they presented themselves to my notice. I am afraid I have already tired your patience by details which may be considered unnecessarily minute. I trust, however, that the novelty of the case, and the many important circumstances it embraces, in a practical point of view, will be deemed a sufficient apology. I therefore send it to you without further comment.

ART. XI.—*Case of Spontaneous Dislocation of the Shoulder Joint. Communicated in a Letter to one of the Editors.* By DUDLEY ATKINS, M. D. of Kingston, Luzerne County.

ABOUT the middle of August, 1824, a lad, thirteen years of age, was brought to me, of whom the following account was given by his father, a very respectable farmer. His son was seized about the middle of July with chills, followed by a high fever, and not long after complained of pain in his left shoulder and arm, which gradually became very hot, red, swoln and painful. As the boy had been harrowing the day he was taken sick, and was conscious of no fall, blow, injury, or other cause, which could account for this affection of his shoulder, the gentleman in attendance naturally supposed that the *cold, fever, or inflammation*, or all together, had fixed themselves in this point. Bleeding, purging, and all the usual general and local antiphlogistic remedies were applied, and he recovered so much strength as to bear moving. In five or six weeks after the first occurrence of disease, he was brought to me; when he exihibited the following appearances. His countenance was pale, and his look precisely that of a child labouring under some scrophulus or other chronic inflammation. I found the shoulder so swoln, that, although he said it was diminished one half, I could learn absolutely nothing as to the state of the joint, but that it was immoveable. The tumour was uniform, hard, pale, and covered with numerous blue veins, seen clearly through the skin, and he complained of pain in the whole arm and shoulder. The arm was much swoln, and on the outside, about three inches from the elbow, was a spot which was red and soft, precisely like the pointing of a deep seated abscess. The father and boy both agreed that the appearance of this spot had immediately followed a long and painful squeeze from the thumb of a practitioner. Upon plunging the lancet into this spot, nothing but a small quantity of pure arterial blood came from the orifice, which relieved somewhat the swelling and pain. I

then directed such remedies as were likely to remove the tumour about the joint, and desired to see him again in a few weeks. At his next visit he informed me that during the night after I saw him first, a discharge took place, from the orifice which I made, of at least a gill of matter, which still continued to be discharged when I saw him. Seeing nothing in the case at present but the consequences of a common abscess, I directed the continuance of the same remedies with some bark, wine, &c. But when he called again, in October, two months from his first visit to me, and near *three and a-half* from the first occurrence of his illness, I found the swelling almost totally removed, and to my surprise, an evident dislocation of the head of the humerus into the axilla. This state of things, his father informed me, began gradually to appear as the swelling was reduced, and he said "they verily believed the boy's shoulder was out of joint." They declared that no force, blow, or accident of any kind had occurred either recently or at any time within their knowledge, but that, as the natural size of the limb returned, they saw this to be its condition. I found the arm as free as old adhesions might be supposed to leave it, yet so fixed as to resist my strenuous individual exertions to effect its reduction. Procuring half a-dozen stout assistants, I placed a folded towel so as to press upon the acromion process, when the thumb of an assistant held it, and gave the ends of it to two men to make the counter-extension. As his arm was still swoln, and the sinus still open, I placed the forearm at right angles to the arm, and with a *moistened* roller fixed the fold of another towel upon the forearm as near as possible to the elbow, the end of which I also placed in the hands of two stout assistants. Then taking his wrist in my left hand, and the arm near the shoulder in my right, I directed them to pull in the direction of an angle of about forty degrees to the perpendicular of his body, when I perceived the bone move, which my little patient also gave notice of himself; I directed the extension to cease instantly, and with a proper motion of

the arm, I as instantly replaced it in the socket. I ought to remark that the extension was *repeated once* with their whole force, before it gave way. Placing a pad in the axilla, I bound his arm to his body, and suspended it in a sling, prescribing rest, good diet, &c. and directed them not to meddle with the sinus, hoping that it would soon close up. When I saw him two months after this, the arm remained in place, though they said it had required *most particular attention to keep it from slipping out*, but the sinus still discharged a thin watery matter. I now introduced a probe six inches in length into the sinus, which penetrated so far as just to leave the point in my grasp, and allowing for the obliquity of its direction, it penetrated *precisely to the head of the humerus*, near which it scraped upon *rough carious bone*. I now ordered strong injections of sulph. cup. to be used, and after a month or two, the oil of turpentine. Small spiculæ and fragments, to the size of half a pea, of dead bone, are sometimes found in the discharge, and in this state it awaits my future operations.—But the shoulder is so strong, that at his last visit to me, I had the pleasure to see him exercise the arm with great freedom and effect.

This case I found to be a tissue of mysteries,—the *abscess*, the *spontaneous dislocation*, the *carious bone*, puzzled me, when combined, although all simple in themselves. A few weeks after, in looking over some notes taken while attending upon the practice of Dupuytren at the Hotel Dieu, I found the following passage, which seemed to set the case in a new light:

"Dupuytren has observed many cases of a disease of the shoulder joint, like the common disease of the hip joint, and generally the effect of scrophulous inflammation. It is attended by the same symptoms as the other, except that their seat is changed. There is first pain in the shoulder or arm, following some exertion or cause of that kind, this is succeeded by pain in the arm, forearm, and elbow joint. It advances from a slight inflammation till there is ulceration of the joint,

and spontaneous dislocation, attended by fever, &c. Of this disease many cases have occurred at the Hotel Dieu. I have entered to-day a girl of fourteen, who has this complaint, the symptoms above detailed followed a violent exertion, but she has now no fever. 1821, Feb."

This seems to me to explain the case above detailed, better than can be done in any other way.

If I were asked at what precise period the dislocation took place, I confess I should be unable to tell; and if I were asked if I thought the *joint itself* destroyed by ulceration, and the *articulating portion* of the *humerus carious*, I would say distinctly, I did not. I conceive that these processes may have gone on so *nearly in the vicinity of the joint* as to have *produced dislocation*, as has often been remarked in cases of *tumours pressing against joints.*

ART. XII.—*On Amputation at the Knee-joint.* By NATHAN SMITH, M. D. Prof. of Surg. &c. Yale College.

FOR several years I had contemplated amputating at the knee-joint, whenever a case should occur in which it would be imprudent to operate below the knee, on account of disease in the bones or soft parts, and in which the superior part of the articulation was sound. I had often performed the operation on the dead subject, and found that it might be so accomplished as to leave a very good stump.

A case warranting the operation, occurred to me in April, 1824. Miss R. D——, of Brunswick, Maine, having a disease in both the bones and soft parts of the leg, of long standing, and so extensive that it was thought improper to operate below the knee, and as the inferior part of the femur was sound, I amputated at the joint.

The operation is performed as follows: Mark two points one on the out and the other on the inside of the limb, the latter half an inch below the head of the tibia, and the other opposite to it.

Then draw a semicircular line from one point to the other, over the anterior part of the leg, and in such a direction that its lower part shall touch the lower part of the tubercle on the tibia into which the ligament of the patella is inserted, and then mark another circle on the posterior part of the leg, exactly corresponding to the former. The above lines limit the two flaps, the former of which will be formed of the patella and its ligament, together with the investing integuments, and the latter of the head of the gastro-cenemeus, the tendons of the flexor muscles, and the popliteal blood-vessels and nerves. The operator should first raise the anterior flap with the patella, which will expose the anterior part of the joint, and render the division of the lateral ligaments easy. Two or three strokes of the knife will then complete the section of the lower flaps, with the crucial ligaments.

In the case mentioned above, the patient recovered with out the occurrence of any thing unpleasant. It was accomplished with less pain to the patient and trouble to the operator, than when the separation of a bone is required. The stump will obviously be more useful, as the lower part of it is formed by the patella which becomes anchylosed to the femur.

This operation has been deprecated by many on account of the complicated structure of the joint, and because of the violent and often destructive inflammations which result from wounds of the knee. By the operation, however, the most complicated part of the apparatus is removed, and the motions of the joint, which is the unfavourable circumstance in wounds of that part, do not irritate the wound. The synovial membrane immediately assumes the adhesive inflammation, and union is speedily effected.

ART. XIII.—*Practical Remarks on the Secale Cornutum, with Suggestions in regard to its probable Modus Operandi.* By CHARLES HALL, M. D. of St. Albans, Vt.

FOR the following remarks on one of the most interesting articles of the Materia Medica, we are indebted to a gentleman, who, in a very extensive practice, enjoys ample opportunities to exercise his professional acumen upon pathological and therapeutic phenomena. The subject is certainly one which ought particularly to interest the cultivators of American Medical Science. As a medicinal agent, it was first satisfactorily tested and adopted in this country, although its peculiar effects, fortuitously ascertained, had long been known to the vulgar. Dr. Stearns was the first who redeemed it from among nostrums; and the writings of Bigelow, Tully, and others, have overcome the professional fastidiousness which had so long rejected it. Still, however, the modus operandi of this agent, and consequently the principle controuling its employment, are as yet undetermined, and its value as a remedy by no means fixed, as appears from the conflicting opinions which are entertained in regard to it. In these respects, therefore, it may be regarded as a fair subject for investigation, and it is particularly the province of American physicians to complete the inquiry which has been, by them, so honourably begun. The facts furnished in the following paper in relation to this subject are interesting and important. The inferences, which appear to have been independently drawn, correspond very nearly with those of Dr. Hosack and some others, who have contributed their observations on this subject.

Remarks on the Properties and Effects of the Ergot.

THE singular operation of the Ergot, when administered to expedite child-birth, has been witnessed with a degree of astonishment—and although its parturient power is rendered

obvious in many instances, yet the manner in which it exerts its influence, is but imperfectly known. Some have considered the effect as specific on the uterine system—others, as sympathetic to a peculiar impression on the stomach and nervous system—some have even viewed it as inert both on the mother and fœtus, while others have had the strongest conviction of its destructive tendency—and all have been constrained to acknowledge its equivocal character as a remedy.

Although, in most cases of real labour, the child is forcibly propelled into the world, by the aid of this article, there are, nevertheless, instances in which its power is not exerted to this end—instead of that powerful, unceasing increase in the pains of labour, which so astonishingly expedites the expulsion of the fœtus, it sometimes excites constant distress of a general nature, without any apparent influence on the efforts of labour. In cases where it does not favour immediate expulsion, it seems to have a fatal tendency on the child; for in such cases, the child is generally still-born.

As the ergot is still held, by some, in high repute in accelerating parturition, and, as the effects attributed to it in this essay, are known to have occurred, it is important that we should inquire more carefully into the *nature* of its parturient effects. That it has saved life in some cases, cannot be doubted; that it has destroyed it in others, is equally certain.

My first knowledge of this article I derived from an old woman, among the Dutch inhabitants in this vicinity, in the year 1811. They had been in the use of it, to hasten child-birth, for a long time. I was, at first, very incredulous as to its power; I believed it to be like tansay, mother-wort, and various other medicines of this class; but my incredulity was staggered after several times witnessing its effects. Not long after this, I saw public notice of this substance, recommending it as safe and useful in many cases of natural labour. I have since frequently had recourse to it; and have learned, not only from my own experience, but from that of other's, that

it does not always increase the pains of travail; that it is hazardous under any circumstances, and occasionally produces fatal effects.

The experiments which have been made upon this singular excresence, show it to be of a poisonous quality. It has not only manifested this property when received into the stomach as an article of medicine, but when its growth has been abundant, and used in the article of bread, its effects have been marked (in France and elsewhere) by extraordinary instances of gangrene among the people. Those acquainted with its use in the time of labour, have witnessed that it has produced mental agitation, pulse small and feeble, and that it has deranged in some degree all the functions of life; and in the most auspicious cases, where the child has been preserved, it has been propelled into the world asphyxiated—the circulation of the umbilical cord partially interrupted—the body and extremities much discoloured—and, in many cases, life almost wholly extinguished. But when the labour has been protracted, the child has generally been born dead. I have noticed one instance, in which the fœtus, when expelled, was not only dead and dark coloured, but its skin was all over completely blistered; though there was undoubted evidence of life but a few hours before, and when the ergot was administered.

In cases of obstructed menstruation, I have known the ergot administered as an emenagogue, but have never known it remove the obstructions; nor has it in such cases induced pressure or pain in the uterine system. It brought on in these cases great distress in the region of the stomach—agitation of the whole system—nausea, and sometimes vomiting. In one case, there was nearly a table-spoonful of the powder taken; it produced oppression about the precordia, general trembling, *discolouration* of the lips, cheeks, extremities, and, more or less so, of the surface generally.

It has been resorted to, in vain, by the unfortunate, in the earlier months of gestation, to promote abortion. In these cases, as I am informed, the drug has been almost uniformly

rejected from the stomach soon after taken, without inducing any apparent influence, either on the womb or fœtus. I have given it, in some cases of threatened abortion, attended with hæmorrhage, where it was deemed expedient for the safety of the patient to be rid of the fœtus; but instead of a dislodgment, a cessation of the hæmorrhage, and of every other sympton of abortion, succeeded, and the woman went safely through to the full time. In these cases, also, the drug was vomited soon after its effects were manifested. The well attested influence the ergot has in checking uterine hæmorrhage, alone shows its immediate effect on the circulation; there are various other proofs which substantiate this position; from which, and from the above, I would proffer an opinion, as it respects the *modus operandi* of the ergot in accelerating parturition; and also, as it respects the causes of its failure.

From the researches and experiments of Magendie and others, it is rendered certain, that there are absorbent veins of the stomach and intestines, by which substances do directly enter the sanguineous system. This truth has recently been illustrated by Prof. N. R. Smith, in his new and interesting theory of digestion. That such is a fact, the quick operation of the ergot serves further to substantiate; that it directly enters the mass of blood, and retards the circulation, its effects on the mother and fœtus go fully to establish; that it contaminates this fluid, and thereby kills the child, the case of vesication of the fœtus from this article, and its tendency to produce gangrene, are confidently referred to.

On these truths I would found the belief, that, in parturition the child is not propelled by any specific influence which the ergot exerts on the fœtus or uterus; but rather by its poisonous effect on the fluid which sustains life, rendering it unfit for the support both of the mother and fœtus. We have all witnessed, and have ample accounts of the same, that, in a state of gestation, any fatal tendency in the mother, brings on speedy efforts of the animal economy to save the life of the

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child by delivery. Cases are in the recollection of almost every practitioner, of women's dying in this state from disease, who, just prior to death, were delivered of their offspring, which has sometimes survived; hence I would infer, that, by the same law of the economy, the child is expelled when the ergot is administered. In favour of this opinion I would notice, that it is only about the period of natural labour that the ergot will induce a dislodgment of the fœtus. That it should not have this effect in the earlier months of pregnancy, it may be remarked, that the resistance to expulsion now is much greater, and the current of blood to the womb and *fœtus*, much less in proportion, than at the full development of the child; hence, the fœtal circulation is but slightly affected, the poisonous drug not having so free access to it now, as at the later stage of gestation; thence, the efforts of nature, that might accelerate parturition at the full time, are now more particularly exerted to expel the noxious cause, and thereby both mother and child are preserved. The want of uniformity in the operation of the ergot, goes also in evidence, that its parturient power is solely from the disorder it excites in the vascular system, placing in jeopardy both mother and fœtus; that it excites no specific influence in the uterine system, more than on other parts of the body; that its effects are alike throughout the general system, only greater where it makes its first impression; that its expulsive influence is nothing more than its poisonous effect on the mass of blood, partially divesting it of that vital principle so requisite to sustain the general circulation, and consequently rendering it inadequate to sustain the life of the child; hence the whole system is in agony, and all its efforts are convulsively exerted to resist the offending cause; and the tendency to dislodge the fœtus is in proportion to its mature development, and its dependance on the general circulation for existence.—Should circumstances be propitious, delivery generally succeeds in a very short time; but should there be a wrong pre-

sentation, or unusual resistance from other cause, the child is deprived of life by its vital sustenance being vitiated or withheld.

Against the position, that the therapeutic phenomena of the ergot are wholly nervous, and that the change in the colour, quality, and circulation of the blood, is to be attributed to this cause. I would urge, among the reasons already cited, its remarkable effect on the fœtus in the case above. It is irreconcilable to me, on this hypotheses, that the child should so speedily become vesicated from this article, through the medium of the nervous influence.

All the benefit resulting from its use in natural labour, is the saving of a little time. In cases of exhaustion from protracted natural labour, it has sometimes had a decidedly good effect; but in other instances of the same sort, it has evidently destroyed the child. In short, in my opinion, that the great value of the remedy is in controlling uterine hæmorrhage, but in child-birth, even although the rules governing its employment be observed, I am fearful its frequent ill effects will more than counterbalance its benefits.

ANALECTA.

1. *Case of Uterine Hemorrhage, in which the operation of Transfusion was successfully performed.* By C. Waller, Esq.—I have for a long time been of the opinion, that the transfusion of blood from the vessels of one person into those of another, is an operation that ought by no means to be ridiculed, much less to meet with that hasty condemnation which it has been its lot to experience from some of the members of our profession. This opinion has been further strengthened by an attentive perusal of the experiments on the dog, which have been so ably conducted, and so accurately described, by Dr. Blundell. I have also had some conversation with the Doctor on the subject; and the result has been to produce a firm conviction on my mind, that in cases (for example) of profuse uterine hemorrhage, if, notwithstanding the cessation of the bleeding, and the employment of the usual means, we find that the alarming symptoms of collapse increase or continue, so that there is reason to presume that, in the course of a few hours, the patient will die, it becomes our bounden duty not to neglect the trial of this operation. It is not proposed, till we have a greater accumulation of evidence on the subject, to employ the remedy *at once* in every case of alarming hemorrhage, but in those cases only where the usual means have been tried and failed: and, surely, there can be nothing ridiculous in this, unless we are so enveloped and shrouded in our own prejudices and opinions, that we are determined to consider every thing ridiculous which is of a novel nature.

The female, whose case I am about to narrate, was of a very delicate habit and strumous appearance. She was a patient in the charity of which I have the superintendance, and was attended by my friend, Mr. Jesse, of Manchester. I had myself seen her about two o'clock in the afternoon, in consequence of Mr. J.'s not being in the way. A large quantity of liquor amnii had escaped just before I arrived at the house. On examination, the head was still above brim, the os uteri nearly dilated, and, as well as the external parts, very dilatable. The pains, however, declined, and I left her, desiring her to send again when they began to increase: this took place in about three hours afterwards, and the child was soon born. Shortly after this, I was requested to go to Mr. Jesse's assistance; and, when I entered the room, the patient was to all external appearance dead: she was lying on her back, completely blanched, her face pale as the sheet that covered her; there was not the slightest tinge of redness on the lips; her hands and feet cold; the power of deglutition suspended; and there was no apparent respiration. On placing my finger upon the wrist, I could just

discover the pulsation of the artery, with, however, occasional intermissions.

On inquiry, I found that the expulsion of the placenta, which was accomplished by nature, was followed by profuse hemorrhage, and that the symptoms of collapse had instantly supervened. The appropriate remedies—viz. the application of cold and frictions,—were immediately had recourse to; and, on my arrival, as the uterus was still large, although there was a considerable degree of contraction (for it felt hard,) and as there was a slight draining of blood, I continued the cold applications to the belly, and applied warmth to the feet; her lips were also smeared with brandy. After a short time she was able to swallow, and then brandy and ammonia were liberally given. For a few seconds after the administration of these stimuli, the pulse would rise a little, but soon sank again. The bleeding soon ceased entirely; and, as she was getting generally cold, we wrapped her up in blankets, and continued the brandy, but with no greater success.

After persevering for about an hour and a-half in these measures, (which I think was giving them a fair trial,) and finding that we were gaining no ground, I determined upon consulting Dr. Blundell as to the propriety of performing the operation of transfusion, especially as he had very kindly offered to come to my assistance, in case of such an emergency as the present, whether it occurred in public or in private practice.

The patient resided in the neighbourhood of Finsbury-square; some little time, therefore, necessarily elapsed before we returned, and the impression upon my mind was most decidedly that we should find her dead. Contrary, however, to my expectation, I found her not only alive, but I thought the pulse was rather more perceptible, although it would not bear the pressure of the finger; we therefore agreed to have every thing in readiness for the operation, but not to perform it at present.

After waiting nearly two hours, we found that the pulse certainly was not lower, and for the last hour it appeared to beat with more regularity. Dr. B. and myself then left her for about an hour, and on our return it was evident that the patient had lost ground; the pulse was fallen again, and she was still lying in that alarming state of faintness, that, although death was not indisputably certain, it was the deliberate opinion, both of Dr. Blundell and myself, that the presumption against her surviving was so strong, that it became our duty to act. The operation was, therefore, determined upon.

The vein in the bend of the arm was laid bare, and an incision of sufficient extent to admit the pipe of the syringe was made into it. As some little blood flowed from the vein, it was found necessary to pass a blunt needle under it, a little below the orifice; by this we could completely restrain it. Now, as

in these cases the patient has not a tea-spoonful of blood to spare, it will be found advisable, in future operations of this nature, to adopt this plan before the opening into the vein is made.

The syringe used by Dr. B. was similar to the common injecting syringe, and contained two ounces. It is, of course, highly necessary that all air should be excluded, as much mischief might accrue from its injection into the vein. The blood was drawn from the patient's husband into a tumbler, and Dr. B. stood ready with his syringe to absorb it instantly,—in fact, while it was flowing: it was then immediately introduced into the orifice in the vein, and cautiously injected. No effect appeared to be produced by the first injection of two ounces, but towards the end of the second there was an approach to syncope; the pulse fell a little; there was sighing, with efforts to vomit, although nothing was ejected. These symptoms ceased spontaneously in the course of a minute or two: indeed, they were very similar to those which occur after venesection, when there is a tendency to, though not actual deliquium.

I should have stated that the patient threw up the contents of her stomach previous to the commencement of the operation; and, whether this was a repetition of her sickness, or whether it was produced by the injection, future observations must prove. In one of those cases which Dr. Blundell has witnessed (in a female,) symptoms somewhat similar were induced; but. in the case of Brazier (a male,) there were no such symptoms, although a much larger quantity of blood was injected.* As, however, in the present limited state of our experience, great caution is required in conducting the operation, and as the patient expressed herself easy, it was considered advisable to proceed no further. Her pulse, which before the operation was 120, was now 110, but of course still feeble.

On our visit in about six hours afterwards, we were gratified in finding that our patient had rallied considerably: her pulse was now 100, and much rounder. She complained much of hunger: a nourishing, but unstimulating, diet was therefore allowed her: and she recovered without a single unpleasant symptom. She slept well, and awoke refreshed, and never complained of that unpleasant state of head so common after hemorrhage. In fact, she required no medicine at all, except a table-spoonful of castor-oil, which was given her on the fourth day, and which purged her much. This irritable state of bowels, as your readers well know, is a common occurrence in these cases. There was no attempt at union by adhesion, and it was not till after the lapse of many days that the vein was healed.

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* Vide *Medico-Chir. Transactions*, vol. x.

Now, it may be said that this patient might have recovered if no blood had been injected; and this is an objection which it is impossible peremptorily to deny; but, as stated above, it was our *deliberate* opinion that the chances were formidably against her, and I think in that opinion any gentleman who had seen the case would have concurred. But this kind of objection might be made to every remedy which is now, or ever has been, in use. We have yet to learn in these, as well as in many other cases, what the powers of nature can do; for it is impossible demonstratively to prove whether the desired change has been produced by nature or by the remedy. It by no means follows that, because death did not take place immediately after the irruption of the blood, that therefore the patient would have survived; for there was in this instance nothing like a rally, even after the lapse of six hours. In the only fatal case of hemorrhage which it has been my lot to witness, the patient survived three hours after the discharge had ceased, and then expired, although the usual means were vigorously had recourse to during the whole of that period. I have frequently, very frequently, regretted that transfusion had not been tried in this instance; though, had the patient been saved by the operation, a doubt might have been raised whether the injection of the blood was the cause of recovery.

Again it may be objected, that the injection of so small a quantity as four ounces of blood was not likely to save a woman who was sinking from hemorrhage. To this I would reply, by stating it to be my firm conviction that this quantity, though small, was sufficient to turn the scale in her favour. Be it remembered that the intention of the operation was not to restore the patient to her former vigour, but merely so far to increase the quantity of the circulating fluid as to ensure the continuance of the heart's contractions, till the system could recruit itself by the more circuitous route of digestion and sanguification. I would also appeal to those who have been in the habit of seeing much of uterine hemorrhage, whether they have not occasionally met with cases where the patient has been brought so low, that another gush of blood, though it should not exceed four ounces, would in all probability be sufficient to prevent the patient rallying: if so, it justifies the opinion I have expressed above, that the quantity, though small, was sufficient to turn the scale in her favour.

The above case has, however, proved, with all the force that a solitary fact is capable of proving any thing—

1st. That the operation is exceedingly simple, and can be performed with the greatest ease.

2dly. That four ounces of blood may be injected into the veins of a woman who is in danger of sinking from hemorrhage, without producing any noxious effects; or, at the most, with-

out occasioning more unpleasant symptoms than often occur in consequence of the abstraction of a small quantity of blood in some subjects; and that, therefore,

3dly. It is highly probable that the blood thus injected is at once made subservient to the general purposes of the circulation.

111, *Aldersgate-street; August*, 1825.

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2. *Origin of the Spinal Nerves.*—M. Amusat announces the following facts as certainly established:—1. That the ganglion, which is situated not far from the origin of each of these nerves, belongs exclusively to its posterior root, and that the threads of the anterior roots are only coiled round it. 2. That this ganglion is not formed of a homogeneous tissue. 3. That the nervous filaments are not interrupted at this spot; but that they are perfectly continuous, only separated the one from the other, and reinforced by the gray substance; and that they form a larger bundle in going out than on entering the ganglion. 4. That the filaments of each root agree in such a manner in their ulterior divisions, that the small nerve contains a thread of each: one destined for sensation, the other for motion.

M. Amusat also announces that the nerves of the sacral plexus, in reuniting to form the sciatic nerve, cross each other in pairs. —*Revue Medicale*, Août.

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3. *Chyle in the Veins of the Jejunum.*—Dr. Meyer, professor at the University of Boun, relates the following case:—A robust man, aged about seventy-nine years of age, died suddenly in consequence of asthma; and his body was taken to the dissecting room. This man had been healthy from his youth: he had never suffered from any severe illness; only, in the course of long military service, he had experienced some cutaneous affections, particularly the itch. He was a great brandy drinker. About six months before his death, he had complained of his chest, of palpitations of the heart, of jaundice, with symptoms of dropsy; but, by proper remedies, he was so much recovered as to return to his usual habits. At the end of three months, his dropsical symptoms returned, with a purulent expectoration, and œdematous feet. He again became a little better; but shortly afterwards he suddenly felt violent darting pains in the chest, with violent cough, and other symptoms of inflammation of the lungs. He was bled, and the blood exhibited the buffy coat. He felt relieved the following day; but, a few hours after having taken some soup, he died suddenly.

The examination of the body showed the following particulars: —A great quantity of serum in the chest, as well as in the pericardium; the lungs adhering to the parietes of the thorax, and full of tubercles, with small crysts containing pus. There was

no remarkable alteration in the viscera of the abdomen. The intestines were then taken out, and preserved for the purpose of demonstration. When the different portions of them were submitted to especial examinations, on the small intestines vessels of a grayish white were perceived, a little inclining to yellow in some parts, and equally visible on the internal surface of the canal as on the outside. At first they were taken for lymphatics; but a closer examination proved them to be veins. The lower third of the duodenum, the entire jejunum, and a portion of the ileum, were spread over with similar venous ramifications, containing a liquor analogous to cheese: nevertheless, this liquor only existed in the minute ramifications upon the surface of the intestines; but, at the spot where the mesentery is inserted, the venous trunks to which these smaller vessels conducted, contained only common blood. Upon many points might be seen, with the naked eye, the little roots of the white veins advance to the edge of the valves of Kerking; and it appeared to the Doctor that, pressing lightly, he drove the white liquor contained in the venous branches to the surface of the mucous membrane. The small intestines were full of chyme. No lymphatic filled with chyle was to be found. Unfortunately, the other abdominal organs were not in a state to permit of examination.

It is not to be doubted, continues Dr. Meyer, that the grayish liquor, which was contained in the smallest branches of the veins, was truly chyle, the colour and consistence of which are in general relative to the quantity of chyme. But it may be asked, how did it happen that the lymphatic vessels contained no chyle, since the patient appeared to have died in the moment of chilification. Circumstances do not permit him to resolve this question; but he conjectures that the venous system may have outlived the lymphatic. Perhaps, the right side of the heart had outlived the left: in this case there would have been a prolonged diastole and systole of the right ventricle, which might have determined the absorption of the chyle by the smaller venous branches of the small intestine. The appearance of the heart rather corroborated this hypothesis.—*Journal Comp.* Août.

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4. *Remarks on the "Living Skeleton."* By John Boyle, Esq. M. R. C. S. &c.—To those unused to visit the bedside of disease and death, the living skeleton (as he is called) exhibits a most extraordinary and pitiable appearance; but, to the physician or surgeon, the most remarkable peculiarities are the great depression of the sternum, and the singular disproportion in the comparative size of the muscles.

On looking at the face, nothing particular is observable: it merely presents the aspect of one who had lived a sedentary life,—an appearance which is strengthened by high cheek-bones and a dark complexion. It is the contrast, then, between this

and other parts of the body that excites curiosity, and to which my attention was drawn during the few minutes allotted to spectators.

The muscles of the neck and those which elevate the scapulæ are powerful; those of the posterior part of the pelvis, as also the fore-arms and legs, are not very small, and are particularly firm. The gastrocnemius of the right leg is of moderate size. The humoral bones are certainly smaller than natural, and exhibit but slight traces of muscle, barely sufficient to give a feeble motion to the fore-arms. The muscles of the trunk, and those of the thighs, are very indistinct; from which it will appear, whether the work of nature or of art, that certain sets of muscles, at alternate spaces only, suffer from emaciation in a great degree: as, for example, the muscles of the face, neck, and shoulder-blades, are well defined; those of the trunk and arms are particularly small; those of the fore arms and posterior part of the pelvis are comparatively large; whilst those of the thighs, again, are weak, and those of the legs may be pronounced strong.

The sternum is concave, instead of being convex, and appears to press the thoracic viscera most at the upper part; a circumstance which, in some measure, accounts for the action of the heart and lungs being perceptible beneath their natural situation in the chest. The abdomen has a strange bag-like appearance, as might be expected, from relaxation and want of power in its muscles. The state of the pulse, tongue, and skin, as well as the appearances of the eyes, are indicative of as good health as could possibly be expected, considering the necessarily debilitated state of the system.

The "living skeleton," like any other subject which presents a deviation from the ordinary course, can serve only for the gratification of a vague curiosity, unless attention be directed to the causes of those peculiarities which render him remarkable: then only does he become a subject of rational and useful inquiry. It is with a view to such an inquiry that I offer the following suggestions; and if, as I conjecture, art shall be found to have been conjoined with nature in producing the extraordinary results which engage public attention, those results would certainly not be rendered less interesting by the inquiry.

That extrinsic measures are frequently practised upon the human frame for interested purposes, might be proved by numberless cases; but, as most medical men are more or less acquainted with these circumstances, it may be sufficient to advert to the numerous stiff joints and wasted limbs exhibited in time of war, by soldiers and sailors desirous of quitting the public service; by itinerant mendicants at all periods, in order to extort charity; and by the Indian fanatic, for the less wise purpose of *gaining cast*.

The malformation of the chest, I admit, must have been either congenital or the result of an accident during infancy: but that such irregularity of the muscles as is manifested in this extraordinary being, is a mere frolic of nature, or altogether the result of disease or accident, appears inconsistent with experience and physiological inference; although some of them may have existed, and may have afforded encouragement for the practice of such external measures as are capable of lessening the bulk and strength of the moving powers.

The right side, over the region of the liver, bears marks of the application of numerous leeches; from which it may be inferred that there was active inflammation at some past period; and which, together with the malformation of the chest, would soon establish a state favourable for the action of local pressure, and, consequently, for the diminution of parts intended to be deprived of healthy action.

It may be said, in reply to this, that if we lesson the force of the circulation in the superior part of an extremity, the inferior portion must suffer in a greater degree; but the fact is not so, as is every day proved by the result of operations for popliteal aneurism, and other cases requiring the security of large arterial trunks, whose vitality in the more distant parts is kept up by anastomosing branches. There is one more strong reason for supposing that the less perfect development of muscle upon alternate extremities mainly depends upon art,—namely, that the muscles at the extreme parts of the body are by far the most powerful; a circumstance which is by no means likely to arise from natural causes, for, as any tyro in medicine must know, in debility and approaching dissolution, it is the remote parts of the body that suffer first, from deficiency of circulation and nervous energy.

I would only add, that the almost perfect growth of all the bones of the body is presumptive proof, at least, of an equal distribution of nutrition; and, consequently, that nature performed her duty up to the period of manhood.

Lond. Med. and Phys. Jour.

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5. *Of the Mucous Membrane of the Stomach and Bowels, in the state of Health and Inflammation; or, Pathological Researches concerning the different healthy and diseased Appearances presented by the Stomach and Intestines.* By C. Billard, &c. &c.—This Essay, it seems, was crowned by the "Athenée de Medicine," of Paris, and we had ordered it for the purpose of analysis, when we met with a very full digest of its contents in one of the French Journals,* from which we have taken what follows.

The mucous membrane lining the alimentary canal is well

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* *Archives Generales de Medicine*, Aout.

known with regard to its structure, and certain varieties of texture in different parts of its surface. But descriptive anatomists have not been sufficiently clear with regard to the appearances of the membrane in its sound state; owing to which circumstance we frequently find ourselves puzzled to distinguish between the healthy condition and one resulting from inflammation. This distinction, however, is very essential, and especially now when no post-mortem examination can be regarded as complete without an attentive and minute inspection of the intestinal canal. To arrive at this desirable point, the author first details a set of dissections, by means of which his object is to point out the various aspects of the mucous membrane in the state of health. He compares the consequences which result from this investigation, with what has been written by various authors on the subject; and, in conclusion, deduces the general conclusions resulting from this double source of information,—viz. reading and anatomical observation.

The mucous membrane of the stomach and bowels presents perceptible differences according to the age of the subject; and cases are related at some length to illustrate this. The information conveyed is interesting; but we shall take leave to confine ourselves to the point more immediately under discussion, and consequently to abridge the observations very considerably.

Embryo, from four to five months old.—The external surface of the tube whitish, and presenting very fine vascular ramifications; the mucous membrane of the stomach rose-coloured, and without furrows: this organ contained a small quantity of clear mucus. In the duodenum, the mucous membrane was of a reddish white, none of the valvulæ conniventes being yet manifest: the same appearance presented itself till the termination of the ilium, which had a brownish stain; this was capable of being removed by washing. Inner membrane of the cœcum a little rose-coloured; that of the ascending colon stained green by the meconium; the colour not removed by washing.

Fœtus of seven months.—Mucous membrane in the stomach thick, white, with a little rose-colour; in duodenum whitish, shaded with rose. Slightly marked transverse lines, indicating the site of the valvulæ conniventes. The jejunum and ilium of a rosy white; the inner surface of the large intestines greenish, from the meconium.

Fœtus at the full period.—Inner surface of the stomach presenting longitudinal striæ formed by the mucous membrane, which was of a light rose-colour; orifice of the pylorus white. The valvulæ conniventes in the duodenum composed of little rounded transverse lines, which disappeared on the slightest stretching of the tube. The mucous membrane throughout the whole of the small intestines white, shaded with rose; villous.

but not so thick in proportion as in the two preceding. Two invaginations were found in the inferior portion of the small intestine, the mucous membrane being quite white in these parts. Large intestine filled with meconium, and internally green. The mucous membrane in this subject was easily detached from the surrounding parts. This fœtus was destroyed during delivery.

Infant of twenty-two months.—The subject of this observation was killed by an injury of the head, having previously enjoyed good health. The mucous membrane of the stomach not thick, but sufficiently villous; of a milk white, but smeared with clear mucus. At the cardiac orifice, the œsophagus was seen to terminate by a white festooned circle, which appeared folded upon itself. The valvulæ conniventes of the duodenum much developed; but there existed between the pylorus and first valvule a space as wide as two fingers' breadth, where the internal membrane was white and villous, but without furrows. The jejunum white, coloured with a yellow fluid, which, however, did not stain it. Same appearance in the ilium, at the end of which were numerous little elevations, white in colour, soft to the touch, and having the size and appearance of millet-seeds. The internal membrane, throughout the whole course of the tube, could only be detached in small portions, the torn edges of which did not bleed.

In this case it will be perceived there was no longer any of the rose-colour of the mucous membrane; the valvulæ conniventes were more distinctly marked, and the glands of the ileum more developed. The author proposes to designate by the name of *pylori-valvular* that portion of the duodenum which intervenes between the first valvule and the pylorus, and which is for the most part destitute of striæ.

Girl of three years old.—Died at the end of five days, of acute arachnitis. Mucous membrane of the stomach of a milk white, soft, and easily detached. In the pylori-valvular space was found a layer of mucus, beneath which the membrane was of a beautiful light rose-colour. The rest of the small intestines white.

Child of eight years.—This child was killed by a musket-shot. Inner membrane of the stomach of a milk white, thick, solid, and adhering strongly to the subjacent coats. The duodenum white, with a slight ash-colour. Much mucus in the small intestines, towards the end of which the ash-tint had disappeared.

A piece of artillery burst at Angers, during a public festival. Three children were killed, and the bodies examined at the hospital.

The first, aged ten years—was killed on the spot. Inner membrane of the stomach and small intestines white; the duodenum having a few yellow stains.

The second, aged fourteen years—killed by an extensive wound of the chest. Mucous membrane of the stomach white; that of the duodenum white, with a shade of ash. In the middle of the jejunum a yellowish tinge, for six fingers' breadth. In the ileum, the membrane whiter and finer than in the preceding portions. In the ileo-cœcal region, some injection of vessels; the cœcum of an ash-white.

The third, aged sixteen years—died some hours after receiving a wound in the region of the hip-joint: he had taken food just before the accident. The stomach filled with aliment; the inner membrane covered with very tenacious mucus, and of a general rose-colour, particularly at the great curvature. The duodenum was filled with a yellowish paste, the mucous membrane being of the same colour as that of the stomach. Beneath this membrane were perceived the blue trunks of veins, which did not give rise to any lateral ramifications. The jejunum was remarkable for the ash-coloured tint of its inner membrane, a hue entirely different from that of the stomach and duodenum.

Young man, aged nineteen years.—Killed by throwing himself from his window, and injuring the head; examined eight hours after death. Stomach filled with a quantity of food. The mucous membrane of the stomach of a rose-colour, with numerous folds, having different directions. Near the pylorus, a number of small glands, white, and soft to the touch: these parts covered with a layer of mucus. The pylorus white, suffering the fore-finger to pass. The membrane of the duodenum white, verging to ash; jejunum the same, having a yellow patch in the middle. In the ileo-cœcal region were found a number of glands, as at the pylorus. In the colon, the ash-tint described in the small intestines was no longer to be seen. Large portions of the mucous membrane could be removed at any part of the canal.

Man aged twenty-eight years.—Killed by an injury of the chest, which he survived an hour. Examination twenty hours after death. Stomach filled with food; the mucous membrane of a fine white, with a slight shade of rose; in the numerous furrows between which was abundance of mucus, having a shade of red. The duodenum white, and slightly ash-coloured. Towards the end of the ileum, three or four patches of bright yellow appeared in the midst of the white surface of the mucous membrane, and which resisted washing.

Man aged forty-five years.—Killed by a fall, which produced rupture of the aorta; examined fifteen hours after. Stomach containing food; mucous membrane white, shaded with red, having numerous striæ and abundance of viscid mucus. At the pylorus, the membrane whiter, and very villous; the duodenum having throughout an uniform light rose-colour, which was lost in the jejunum and ileum. The membrane of the great intestine white.

In the above cases, no reasonable doubt can be entertained with regard to the healthy state of the digestive organs, as the patients died of diseases unconnected with them. Three other cases are detailed, but these we omit, as the individuals laboured under complaints of some duration.

The general summary from the preceding observations is—first, that the mucous membrane of the stomach and bowels presents general characters, which are peculiar to it, and distinguish it from other membranes of the body; secondly, that it has characters peculiar to different ages; thirdly, that the colour varies according as the examination is made during or after digestion.

I. *General characters.*—The general characters regard principally the colour of the membrane, the folds or striæ which it forms, and the villosities and mucous follicles proper to its structure.

The colour of the stomach in the adult is usually whitish; that of the duodenum and jejunum white, verging to ash-colour: this ash-colour terminates at the conclusion of the ilium, and the membrane becomes whiter in the great intestine. The mucous striæ or furrows of the stomach have an irregular disposition, and do not always exist within the organ: generally they are most numerous at the great curvature, and co-exist with a contracted state of the stomach. As observed above, there constantly exists between the pylorus and the first of the valvulæ conniventes in the duodenum, a space as large as two fingers' breadth, where the membrane is destitute of fold or valvule. In the natural condition, the valvulæ of the duodenum, all lying in the same manner, and partly covered by each other, considerably resemble a surface covered with plates which overlap. Towards the end of the small intestine, these valvulæ become further separated, and more and more effaced.

The villosities are abundant in the stomach, particularly towards the pylorus: in this region they are usually grouped, a little flattened, and separated by very fine lines, similar to those on the skin of the hands. These villosities are less perceptible in the small intestines, and so little apparent in the large, that at first sight one would be tempted to doubt their existence.

The mucous glands may become developed in the sound state, and their mode of development, together with the variety of appearances which they give to the membrane, merits particular notice. It is difficult to compare the thickness of the internal tunic of the alimentary canal to any given measure,—the only way of judging of it is by the greater or less degree of its transparency: if, then, we tear off a portion, and lay it upon the finger, we see this as through a piece of white crape. In general, the membrane is thicker in the duodenum; less so in the stomach; then in the rectum, jejunum, ilium, and large intestine. In the

stomach, it is thicker at the pylorus, at the cardia, and at the lesser curvature, than in other parts. We must take care not to confound the relative thickness of the mucous membrane with that of the entire parieties of intestine.

Certain other peculiarities of appearance in the mucous membrane might be enumerated, which are consistent with its healthy state, although not invariably found. Thus, the whitish circle which terminates the œsophagus encroaches more or less upon the stomach; accidental folds, crossing the direction of those which are natural, are occasionally found on the internal surface of the intestines; yellow patches, or bands of this colour, are observed; and worms induce no corresponding change of the membrane.

When the mucous follicles are developed, their mouths must be coloured for the naked eye to distinguish them; and the orifice, or tubercle, which corresponds to the opening of the ductus communis choledocus, or pancreatic duct, is not easily perceived, without pressing the duct so as to force out its contents.

M. Billard relates the case of a man, killed by a fall from a great height, in the stomach or duodenum of whom the folds and valvulæ conniventes were deposited in such a manner as to form square and lozenge-shaped spaces, as is observed in the second stomach of ruminating animals. Besides this, funnel-shaped depressions were easily seen with the naked eye in the cœcum, analogous to those described by Sir E. Home; but which he could not discern without the aid of a microscope.

II. *Varieties of the mucous membrane depending upon the age.*—In the embryo and fœtus, the membrane is rose-coloured, which is probably owing to the habitual congestion in the vessels of the abdomen; the inner surface of the great intestine is generally green. At this period of life, abundance of mucus lines the inner surface of the bowels. In infancy, the mucous membrane is of a milk white; of a less brilliant white during adolescence; and, in the adult, of a white verging to ash. This last shade is more striking in elderly persons, unless they are arrived at extreme old age, when the mucous membranes, in a manner, lose their colour, like other parts of the body under similar circumstances. If there be any impediment to the circulation, the venous blood flows back into the intestinal vessels, the blue-coloured branches of which are seen ramifying under the mucous membrane, a circumstance not uncommon in old persons.

III. *Differences during or after digestion.*—During digestion there is a sudden and transient flow of blood to the stomach, the presence of which gives a rose colour to the mucous membrane. The duodenum, and occasionally even the commencement of the jejunum, participates in this colouring; but, except from this circumstance, it is never of a red tinge, as described

by most writers. The other intestines afford no sensible varieties in their appearance.

It would appear that the blood thus accumulated in the mucous membrane during life, may remain there after death. Some of the cases quoted above tend to prove this; and M. Billard gives two remarkable facts in addition. A man hanged himself one evening in a public walk at Angers: next day the body was opened; the viscera were yet warm; the stomach, which was very small, contained three or four spoonsful of a whitish liquid, without smell; a white mucous substance formed a thin layer, which covered the furrows of the internal membrane, the colour of which was a light rose. Many lacteals were very apparent: on pressing them, the chile, which was seen through their parieties, was made to flow out. An old gens-d'arme, affected with palsy of the tongue, and a slight mental derangement, died from suffocation, caused by eating too fast. On opening the body, which was done next morning, the mouth, pharynx, and œsophagus, and even the larynx, were found filled with food; the stomach likewise was filled: the mass which this contained was softened and altered at the surface, but within, portions of beef and bread were recognised. The mucous membrane was of a fine rose-colour. These two facts are strongly in favour of the author's opinion respecting the state of the stomach during digestion.

Opinions of authors relative to the aspect of the mucous membrane of the stomach and bowels, in its healthy condition.—Sabatier has erroneously pointed out a reddish purple as the natural colour of the stomach. M. Portal justly remarks, that congestion of the veins may give a dark red to the lining membrane; but it is not correct to say that this colour is, in general, a mark of inflammation, as it may arise from causes entirely different. Neither is he correct in asserting that the jejunum is rather redder than the ileum. In the Anatomy of Bichat, we find only very vague notice of the appearance of the inner membrane of the intestinal canal in the stomach and duodenum: it is said to be reddish, and it would follow, from other remarks, that it is thicker in the small intestines than in the stomach; an assertion contrary to what is advanced by M. Billard. Gavard describes the inner surface of the stomach as gray, verging to red, but he says nothing of the colour of the intestines. Boyer, in calling the membrane of the stomach grayish, *(grisatre,)* seems to allude to that tint which the author before us describes as white verging to ash-colour, *(blanc legerement cendre;)* but Boyer adds, that this grayish colour has a shade of yellow or red. Now this last expression can only be correct with reference to the stain produced by the bile, and the redness produced by congestion; which, however, are but accidental circumstances. MM. Chaussier, Adelon, and Cloquet, assert that the stomach is a marbled red, and that the duodenum is reddish-

M. Billard does not regard the marbled appearance sometimes presented by the stomach, as belonging to its healthy condition; but M. Margolin thinks that the mucous membrane of this organ may have brown or blackish spots, without any other alteration of its texture. Beclard says that the colour of these membranes varies from white to red. Albert Meckel states that he never injected the villosities, without the mucus, and sometimes the whole contents of the canal, taking the colour of the injection; a phenomenon which may serve to explain the exudation of blood, which is occasionally found in passive congestions.

In concluding this part of the subject, M. Billard points out the resemblance and disagreement between the results of his observations, and those published in a posthumous Essay by M. Rousseau, inserted in the Archives Generales de Medicine, tome vi. "This gentleman," says our author, "lays it down as a principle, that, in the sound state, the mucous membrane of the stomach and bowels is white, or white with a slight tinge of rose. This assertion is true; but the question is, under what circumstances the membrane is white, or slightly rose-coloured? and this M. Rousseau could not determine in the conclusions drawn from his interesting observations. The recital of the observations themselves is sufficient to prove this. Thus, the three first individuals (who were executed,) in whom he examined the digestive organs a few moments after death, showed the membrane white or whitish; neither the stomach nor intestines contained any aliments. In the second, it is true, the stomach had in it a portion of red wine; but it is not stated that any food was found along with this. In addition to the arguments used by the author of this memoir to prove that the whiteness was not the effect of the hemorrhage from the decapitation, may now be added the testimony of the observations proper to myself, and in which I found the membrane of the stomach of a white, more or less marked. In the three other individuals, the post-mortem examination of whose bodies is recorded by M. Rousseau, the stomach and commencement of the alimentary canal did contain food, and the mucous membrane in them was rose-coloured. In the fifth instance, in particular, it was observed that the mesenteric ganglia suffered a white fluid, having the characters of chyle, to exude on being cut; and, lastly, in the sixth observation, M. Heller found the stomach sound, its mucous membrane perfectly white; the small intestines contained a small quantity of food, and were reddish.

"These cases bear a strong analogy to mine, and M. Rousseau might have deduced from them similar conclusions; but he did not draw all the consequences which naturally flow from them. The author quoted appears to me to deny too strongly the passive nature of congestions of blood in the mucous membrane, in the case of affection of the heart or embarrassment of the circu-

lation. If he had admitted, as a consequence of his observations, that the mucous membrane of the stomach and duodenum might become rose-coloured during digestion, he would not have been in haste to say that the subject of his seventh observation had an affection of the stomach, because the mucous membrane was found of a deeper rose-colour towards the lower part of the viscus, and appearing, after a few washings, covered over with small patches and bands. Nothing can be more unfounded than this opinion, particularly when we consider that the stomach of this individual contained wine and food imperfectly converted into chyme. I shall demonstrate in another place, that little patches and bands of a red colour on the mucous membrane, are not always the consequence of inflammation. The author never speaks of that slight ash-coloured shade which usually mingles with the white of the mucous membrane. I do not, therefore, admit his conclusions, except with certain restrictions, which may easily be perceived on comparing his inductions with mine."

Of the glands of the mucous membrane of the alimentary canal.—Some historical researches on the anatomy of these glands precede the description of M. Billard. He remarks, that they were noticed by T. Willis; that Stenon, Malpighi, Glisson, &c. have mentioned them in their works; but that it is to Peyer, who gave them their name, and Bruner, who followed him, that we owe our exact knowledge of these glands,—so exact, indeed, that little remains to be added to what they have said. They have been described with care by Beclard and Meckel; and it is from the materials furnished by these various sources, that M. Billard gives the following description:—

These glands ought to be studied in their healthy and diseased condition. They must not be confounded with the glands of Lieberkuhn, the existence of which is doubted by Cuvier, and which Meckel does not appear to have seen in his microscopic observations. These glands are not scattered at hazard on the internal surface of the digestive canal; they observe an order which it is of importance to examine: thus they are, first, isolated or solitary; secondly, grouped in little irregular masses; thirdly, united into oval or olive-shaped patches. Those which are isolated offer the most simple state of glandular structure: they are principally found in the stomach, in the pyloric region, in the duodenum, in the cœcum, and the rest of the large intestines. They occupy indifferently the free or adherent surface of the intestine, the summits of the valvulæ, and their interstices. Their size, in the healthy condition, never exceeds that of a millet-seed; in their centre may be detected an almost imperceptible point, which indicates the orifice of their excretory duct; they are white, soft, and are broken down with the utmost facility. They may be named *criptæ muciparæ*. These cryptæ unite, and form little irregular masses, which are gene-

rally found at the adherent edge of the digestive tube. At the inferior third of the ileum are often found patches, the number of which varies, but the oblong form of which, and the situation on the free edge of the intestine, are constant. They are limited by a border, which is but little elevated, on the level of which the valvulæ conniventes are always interrupted. They present three degrees of development, at each of which they have a particular aspect:—First, They present a surface which is simply wrinkled or puckered; glandular granulations are not yet perceptible; they appear to be situated beneath the membrane, which they elevate a little: they form in this state what are called by the author *plaques gauffrees.* Secondly, In the midst of these wrinkled patches some white granulations, occasionally pointed at the summit, appear here and there; and between them may be perceived a mucous fold, which unites them to one another. Thirdly, The entire patch is studded with elevations, generally pointed at their summit, and which are interspersed with folds of the mucous membrane: sometimes the *ensemble* of these folds and glands gives them a certain degree of resemblance to a piece of coarsely polished granite. Such are the appearances of the glands of Peyer, in their sound state. They are not found in every subject; nevertheless they are very frequent. Their presence does not indicate a diseased state of the mucous membrane; but they are themselves susceptible of certain changes, which the author promises to explain in another place.

Some general conclusions follow, and terminate the Essay; but, as these are mere repetitions of what has already been stated in different parts of this analysis, any one who has read it must already have made them for himself; and those who might be desirous of jumping to the conclusions without perusing what precedes, could not possibly understand them.—*Lon. Med. and Phys. Journal.*

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6. *Cause of Barrenness in Prostitutes.*—It is no uncommon thing to see the fimbriated extremity of one or both fallopian tubes adherent to some of the neighbouring parts. In the eighth volume of the Medico-Chirurgical Transactions, p. 505, Mr. Langstaff states that he has noticed this particularly in Cyprians. During the last year two patients who had died in the foul ward of St. Thomas's hospital, and a notorious prostitute who had died in a clean ward, were opened, and the tubes found adherent; both in two of them, and one in the youngest. We have been accustomed to account for the sterility of prostitutes solely by the supposition of exhausted excitability. It is sufficiently explained by these adhesions, which arise, no doubt, from that state of inflammatory turgescence which occurs to the tubes, in common with all the generative organs, during copulation, and causes them to experience a sort of erection and to embrace the

ovaria, being scarcely ever allowed to subside. Not that the occurrence can be universal, because old prostitutes, on marrying after transportation, have occasionally been remarked to breed in New South Wales.—*Med. Chirurgical Transactions*, vol. xiii.

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7. *Removal of a great Portion of the Scapula.*—M. Janson, principal surgeon of the Hotel Dieu at Lyons, relates the following case:—A female employed in the manufactory of silk, forty-three years of age, began, in 1819, to perceive a tumour on the posterior and middle portion of her shoulder-blade; it was immoveable, painful to the touch, and appeared fixed to the bone. In 1824, this tumour had acquired the size of a child's head, was hard, wrinkled, and had occupied all the bone, excepting its inferior border and the supra spinal fossa, and had extended itself into the highest part of the axilla, with an elongated and voluminous pedicle. It was moveable in all directions, and carried the arm with it in all the motions given to it. The portion of this swelling which was situated in the axilla, obliged the patient constantly to keep his arm elevated, and at a right angle with the trunk of the body. Violent pains, darting from the shoulder along the arm, were felt in the breast. At length, from want of sleep and indigestion, the patient had become emaciated, and was evidently sinking.

On the 4th of October, M. Janson attempted the removal of the tumor. He included it within two semi-eliptical incisions; dissected the edges of the wound, so as to preserve as much skin as possible, and detached the tumour in every direction: then raising it, and the tumour breaking in the centre throughout its whole thickness, he removed the greatest part; cutting the attachment of the trapezius, of the supra and infra spinatus muscles, he discovered that all that portion of the scapula situated above its spine was in a healthy condition; and, separating by the saw the diseased part of the bone, he thus preserved the articulation of the arm. Finally, laying bare that portion of the tumour situated in the axilla by an oblique incision from below upwards, he dissected it, and drew it upwards carefully; the cellular tissue which fixed it to the arm gave way, and he succeeded in removing it entirely. All the vessels were then tied; the axilla properly supported by a plug; and the edges of the wound, which was six inches across and nine in length, were brought together with sticking-plaster.

For a few days the success of the operation was doubtful, from causes affecting the general health; but these were calmed, and the patient quitted the hospital at the end of two months, nearly cured.—On the 15th of March, it was entirely healed, and the motions of the limb were becoming daily more free.

Archives Gen. August.

8. *Case of Uterine Hemorrhage, successfully treated by the Operation of Transfusion.* By EDWARD DOUBLEDAY, Esq. M.R.C.S. and Fellow of the London Medical Society, &c.

Mrs. Cocklin, æt. twenty-nine, a woman of robust constitution, residing at 59, Brunswick-street, Stamford-street, was delived of a female child, by my friend, Mr. George Franks, on Wednesday, September 28, at a quarter past four A.M. Nothing particular occurred during the birth of the child. The usual means were resorted to, to cause the expulsion of the placenta, but without success. After the lapse of about two hours, hemorrhage came on to an alarming extent. The hand was now introduced into the cavity of the uterus; and the placenta, which was strongly adherent to its fundus, was extracted as speedily as possible.

At this time Mr. G. Franks requested my attendance. At the period of my arrival, I found the uterus contracted upon the placenta, which was now being brought away.

Before and during the extraction of the placenta, so much blood was lost that the woman was reduced to syncope; and her appearance was such that, on my entering the room, I feared speedy dissolution would ensue. The pulse could not be felt at the wrist; the countenance was exsanguineous; lips pale; nostrils pinched. sight indistinct; excessive restlessness; breathing hurried, accompanied with frequent sighing; and the body was covered with cold clammy perspiration. I gave her a teacupful of brandy (about six ounces); after which the pulse became just distinguishable. Brandy was repeated at short intervals; and, in addition to this stimulus, carbonate of ammonia and laudanum were administered. These measures were employed vigorously for half an hour, but their influence was very transitory. The pulse was sometimes perceptible and very rapid, and at others could not be felt. No real advantage being obtained by these means, it appeared to me that the only remedy left, by which it was probable that the life of the patient could be preserved, was the operation of transfusion.

I therefore immediately set off for Dr. Blundell, leaving Mr. Franks in care of the patient. I fortunately found the Doctor at home, and he politely accompanied me to her residence without delay.

We found the woman certainly not worse; but, after a deliberate investigation of the present state of the pulse, aspect of the countenance, and the quantity of blood lost, it was Dr. Blundell's decided opinion, in which I fully concurred, that the probabilities against her recovery, without transfusion, were so strong as reasonably to demand the operation. The operation was proposed to the husband, who not only agreed to it, but also to furnish us with the necessary supply of blood.

Dr. B. commenced the operation by exposing the median cephalic vein, which the patient resisted to an astonishing de-

gree. The opposition which was offered on the part of the patient, induced the Doctor to abandon the operation for the time: not, however, with the expectation that she would ultimately recover.

The idea of being left to witness the death of this poor woman, without making the attempt to save her life by the operation of transfusion, operated so powerfully upon my mind as to induce me to request the Doctor to leave his syringe, &c. with a hope that, when the woman was *in articulo mortis*, I should be able to perform it.

Mr. G. Franks was again left in care of the patient, with directions to continue the stimulants, &c. &c. About half-past two o'clock P. M., *being upwards of six hours after the hemorrhage had stopped*, I received a note from him, stating that she was *sinking very fast*, and that he did not believe she would be alive by the time I could get there. I immediately proceeded to the spot, and found the patient all but gone. At this time twenty ounces of brandy, 160 drops of laudanum,* and a considerable quantity of ammonia, had been given; besides the yolks of three eggs beaten up in brandy, and some beef-tea and gruel.

As no time was to be lost, and as the friends were anxious that the operation should be tried, I at once proceeded to pass a blunt needle under the vein which had been already exposed by Dr. B. When this was accomplished, I made an opening into it, large enough to admit the beak of the syringe. Mr F. placed his finger upon the vein, and gently pressed it upon the needle, in order to prevent any loss of blood. A vein in the arm of the husband was now opened freely, and the blood allowed to flow into a conical drinking-glass; and, as it flowed into the glass, I absorbed it into the syringe, taking care to keep the beak at the bottom, which was covered with about half an ounce of blood. The object of this precaution was to prevent any bubbles of air from being absorbed with the blood: but, to be quite positive on this head, I placed the syringe with the beak perpendicularly above the handle,—that is, with its nosle upwards,—and forced a little blood through it, before I introduced it into the vein. The beak of the syringe being carefully introduced into the opening made in the vein, the blood was gently forced in, in a direction towards the heart. As the syringe was emptied, *the pulse rose*. The syringe was refilled, but not before the small quantity of blood which was left in the glass was thrown away; and, as this second quantity was injected, *the pulse became broader*, and the appearance of the

* The laudanum was given within the first two hours after the flooding had ceased, with a view to allay the extreme restlesness; and apparently with benefit.

lips and countenance much improved. Another syringeful was thrown in, (making six ounces,) in the same way, with very marked improvement in the condition of the patient. So much was she recovered, that, to use her own language, she exclaimed "I am as strong as a bull!" As the fourth syringeful was being injected, she stated she felt the blood going up the veins. This injection produced additional improvement in her aspect and in the pulse, which was such as indicated considerable power in the system; and she stated that she felt quite recovered.

I here hesitated whether it would not be better to stop the process; however, as there was no unfavourable symptom, and as the patient had improved upon the injection of every additional quantity, I determined to go on till something should occur which might induce me to believe that the operation should not be proceeded in further. I accordingly threw in *three* more syringefuls in the same way, (making fourteen ounces,) with continued improvement in the power of the pulse; which now led me to believe that, notwithstanding the *copiousness* of the *flooding*, the *large vessels* were distended as much as at any time during health. She at this period complained of a little pain over the left eye, which induced me to discontinue the process of injection, thinking that as much blood had been thrown in as the woman could bear with impunity. The opening in the vein was therefore closed in the usual way.

The pulse, some time previous to the operation, when it could be numbered, was 140, *but was now reduced to* 104. *A-quarter of an hour after the operation, it was* 98; *in half an hour*, 90. *The pulse, for the most part, was strong, soft, and full, but somewhat irregular, and continued so for upwards of two hours. At about the expiration of an hour after the blood was injected, she sat up, and assisted the nurse in undressing and in making herself more comfortable, as if nothing had occurred beyond what is observed in ordinary cases.*

Half-past six, P. M. (three hours after the operation.)—Pulse 94, strong, and full; skin hot; tongue becoming furred: thirst considerable; has had some little uterine pain; bowels constipated. These symptoms might be attributed, in a great measure, to the influence of the brandy, ammonia, and opium. I now ordered a purgative enema, which was immediately injected.

Half-past eight, P. M. (five hours after the operation,) I again saw her. She had slept a little since my last visit. The enema had produced two copious evacuations. Pulse 120; skin perspiring freely; tongue moist. Has taken nothing into the stomach since the operation. At this time she felt restless, and had some pain in the hypogastric region, which induced me to order sixty drops of tincture of opium.

Half-past eleven, P. M. (eight hours after the operation.—*Nothing has been taken into the stomach since the operation was*

performed. Skin covered with copious perspiration. Has had some refreshing sleep.—Ordered an aperient.

Thursday, six o'clock, A. M.—Slept comfortably through the night. Pulse varying from 96 to 100; skin perspiring, tongue somewhat coated, but moist; thirst considerable; bowels not open.—Aperient medicines continued.

In the evening I again saw her, and examining the arm, found some inflammation had taken place in the course of the vein. On tracing the vein accurately with my fingers, I found the tenderness increase as I approached the axillary vein, where it empties itself. Pulse 100, strong, and jerking; tongue dry, and rather brown in the centre, but white and moist towards the edges; skin perspiring. Secretion of milk so copious as to produce considerable pain in the breasts. I am disposed to think that the state of the mammæ was the principal cause of these symptoms, as the febrile action was not more than what is frequently observed when the breasts are full and painful; but how far they may have been increased in this instance by the inflammatory action of the vein, is uncertain. Twelve leeches were immediately ordered to the arm in the line of the vein, with directions to apply fomentations to the limb as soon as they dropped off. The lint was taken from the wound, and a poultice applied. These measures, assisted by purgatives, nearly subdued the inflammation and slight tumefaction which had taken place.

Friday.—There was left some tenderness at the upper end of the vein, which had not apparently diminished since my last visit, but which was removed by the application of six more leeches. The secretion of milk was copious, and rather troublesome, as it gave her pain, and required the breasts to be drawn frequently.

It would be useless to detail minutely the subsequent treatment in this case. Suffice it to say, that it consisted of saline aperients, as occasion required, and such other medicines as are usually given in common cases.

October 4th.—The seventh day after the operation, she felt quite well, but the wound in the arm was not cicatrised. The medicines were discontinued.

I have to add, that, in consequence of over-exertion in the management of her household affairs, slight inflammation was reproduced in the vein on the 5th October, which is not yet entirely subdued.* This has not excited the system at any time, so as to influence the pulse in any considerable degree. It has not been, at any instance since the inflammation recommenced in the vein, above eighty in a minute.

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* Perhaps, where there is choice, it would be better to inject blood in the left arm, instead of the right, which was resorted to in this instance, as the left is less likely to be injudiciously used during convalescence.

From this case every thinking mind will, of course, deduce its own inferences.

It might be presumed that, in consequence of the resistance made to the exposure of the vein, and the general restlessness of the patient, she could not have been so much exhausted as I have above stated. These symptoms, however, are common, and are not to be regarded as indicative of strength in such cases, but of some peculiar disturbance of the nervous system, which I am not prepared to explain; and I am borne out in this opinion by their general termination, and by the subsequent assertions of the patient, who said that she had no recollection of having made resistance. This violence appears to me to be allied to that jactitation which sometimes immediately precedes death from flooding, and which I once had an opportunity of witnessing in a woman who died in my presence three hours after the delivery, notwithstanding the most vigorous means were made use of for her preservation.

From the facts above related, it seems to me we learn—

First, That fourteen ounces of blood from the veins of a man may be received in a tumbler, and transferred by means of a syringe, with the greatest facility, to the veins of a woman nearly exhausted by bleeding, without necessarily destroying life, or even, of necessity, producing any dangerous symptoms.

Secondly, From this case, viewed in connexion with that of the woman in Grub-street, operated upon by Dr. Blundell and Mr. Waller;* we might infer that, although symptoms of slight syncope may occur under transfusion, they are not necessarily inseparable from the operation, but accidental; as in this woman, during the operation, effects the very reverse were observed: instead of any appearance of syncope, sudden, and even surprising, invigoration of the system were produced.

Thirdly, As this woman, after the injection of six ounces of blood, felt an increase of strength astonishing even to herself, and as, after the operation, there was a great deal of mammary action, approaching to inflammation, as well as other proofs of a thorough invigoration of the system, it may, I think, be fairly inferred that the injection of fourteen ounces of blood was more than sufficient to supply her wants. It is not unlikely that eight ounces would, under her circumstances, have been enough; and this case, therefore, gives an additional probability to the opinion that the four ounces transfused in the Grub-street case really preserved the life of the patient, as this woman was rather under the middle size.

Fourthly, Two successive cases of transfusion, unattended with dangerous consequences, do not, of course, demonstrate that the operation is wholly secure from danger; but they may

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* See the last Number of this Journal.

raise in us a reasonable hope that such may hereafter be found to be the case. The tenderness and swelling in the line of the cephalic vein, however, though at no period alarming in this woman, must not be lost sight of: but how far it may be accidental, time must decide.

Fifthly, should the operation hereafter not only prove practicable and easy, but very safe, there are various other cases, besides those of desperate inanition, in which it might be employed with probable advantage. To enumerate these, however, I am not at present prepared; but Dr. B. has suggested to me, in conversation, that perhaps the operation may be found serviceable in cases where too much blood has been taken from the arm, and in those cases where, in consequence of floodings during delivery, various morbid symptoms may be expected, although they be not dangerous to life. Great care, however, must be taken not to abuse the operation, by a too-frequent and unnecessary resort to it.

Sixthly, As this woman survived, it cannot be incontrovertibly asserted that, if the operation had not been performed, she must certainly have sunk. In all these cases there will be room for difference of opinion; but that women do die from uterine bleedings, half an hour, an hour, nay sometimes two, three, or more hours, after the hemorrhage has been arrested, is well known: and, I presume, the most sceptical will not deny that fourteen ounces of healthy blood would be sufficient to turn the scale in their favour.

In my humble opinion, it is much to be regretted that this operation has been so long neglected: the deaths of several women from hemorrhage have recently come to my knowledge; and it is probable that hundreds of persons have died since it was first promulgated, whose lives, I think it is not too much to say, might have been preserved by a timely resort to it.

In conclusion, I may say that I feel satisfied it will be found an operation simple and easy; requiring only common care, common caution, and common ability to perform it with success, as far as the operation is concerned, in all such cases as that which I have above related.—*Lond. Med. and Phys. Journal.*

82, *Great Surrey-street, Blackfriars-road;*
October 10*th*, 1825.

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9. *On the Effects of Loss of Blood.* By Dr. Marshall Hall.—The subject of this paper is of the highest interest, both in a physiological and practical point of view, and we recommend it as meriting particular attention: it is the most important in the volume. It is stated by Dr. Hall, and justly, that the effects of loss of blood are frequently such as suggest the idea of increased power of the system; thence leading us to the further employment of the lancet, under circumstances when its use is highly prejudicial. As an example, we may refer to the throbbing of

the carotids, and apparent determination to the head, which follow uterine hemorrhage, or any other very copious depletion; a state of symptoms leading an inexperienced practitioner to the idea that still further evacuation is required to free the system from the increased arterial action. This we have had occasion to see, and therefore conclude that others are equally familiar with the fact. But we must return to the author before us. In giving us the results of his observations on the effects of loss of blood, he adopts the following arrangement:—

"I. Of the immediate effects of loss of blood, chiefly syncope, and of the re-action or failure of the vital powers.

"II. Of the more remote or cumulative effects of repeated or protracted loss of blood, or *exhaustion:* and 1, of exhaustion with excessive re-action; 2, of exhaustion with defective re-action; 3, of exhaustion with sinking.

"III. Of the effects of further loss of blood in cases of exhaustion. 1, Of the substitution of syncope for re-action; 2, of the transition of the state of re-action into that of sinking; 3, of sudden dissolution.

"IV. Of the influence of various circumstances on the effects of loss of blood. 1. Of age, &c.; 2, of disease.

"V. Of the effects of loss of blood on the internal organs. 1. The brain; 2, the heart; 3, the lungs; 4, the intestinal canal, &c."

I. With regard to the immediate effect of loss of blood, the most common is syncope. In this condition the phenomena seem to indicate that the brain is the part the function of which is first impaired: next the respiration suffers, and the action of the heart becomes weakened, both from the diminished quantity of blood brought to it, and from the difficulty in its arterialisation.

"In cases of profuse hemorrhagy, the state of the patient varies: there is at one moment a degree of syncope, then a partial recovery. During the syncope, the countenance is extremely pallid; there is more or less insensibility; the respiratory movements of the thorax are at one period imperceptible, and then there are irregular sighs; the pulse is slow, feeble, or not to be distinguished; the extremities are cold, and the stomach is frequently affected with sickness. I have observed that when the movements of the chest, in the interval between the sighs, have been imperceptible or nearly so, the respiration has still been carried on by means of the diaphragm. It may also be remarked, that the state of syncope is often relieved, for a time, by an attack of sickness and vomiting; immediately after which, the patient expresses himself as feeling better; the countenance is somewhat improved, the breathing more natural, and the pulse stronger and more frequent.

"In cases of fatal hemorrhagy, there are none of these ameliorations. The symptoms gradually and progressively assume

a more and more frightful aspect. The countenance does not improve, but becomes pale and sunk. The consciousness sometimes remains until towards the last, when there is some delirium; but every thing denotes an impaired state of the energies of the brain. The breathing becomes stertorous, and at length gasping. The pulse is extremely feeble, or even imperceptible. Animal heat fails, and the extremities become colder and colder, in spite of every kind of external warmth. The voice may be strong, but there is constant restlessness and jactitation. Ultimately the strength fails, and the patient sinks, gasps, and expires." (P. 124–5.)

The system usually rallies spontaneously from syncope; and the act by which the recovery is effected, is called re-action. Now this re-action may be either excessive or defective, or altogether wanting. The phenomena resulting from these circumstances form the subject of subsequent inquiry: at present it is only to be added, that loss of blood occasionally gives rise to attacks of convulsions, instead of syncope.

II. The recovery, under favourable circumstances, is generally a simple return to health, the pulse not exceeding its natural frequency. When the bleeding has been profuse, the pulse becomes, and continues for some time, more frequent than natural; and if the individual instead of a copious loss of blood occurring at one time, is subjected to repeated venesection, the pulse acquires an increased frequency, with throbbing, and occasionally all the symptoms of excessive re-action. They are thus described:

"The state of excessive re-action is formed gradually, and consists, at first, in forcible beating of the pulse, of the carotids, and of the heart, accompanied by a sense of throbbing in the head, of palpitation of the heart, and eventually, perhaps, of beating or throbbing in the scrobiculis cordis, and in the course of the aorta. This state of re-action is augmented occasionally by a turbulent dream, mental agitation, or bodily exertion. At other times it is modified by a temporary faintness or syncope. In the more exquisite cases of excessive re-action, the symptoms are still more strongly marked. The beating of the temples is now accompanied by a throbbing pain of the head, and the energies and sensibilities of the brain are morbidly augmented. Sometimes there is intolerance of light, but still more frequently intolerance of noise and disturbances of any kind, requiring stillness to be strictly enjoined, the knockers to be tied, and straw to be strewed along the pavement. The sleep is agitated and disturbed by fearful dreams; and the patient is liable to awake in a state of great hurry of mind, sometimes almost approaching to delirium. In general this is slight, but occasionally severe and even continued. More frequently there are great noises in the head, as of singing, of crackers, of a storm, or of a cataract; in some instances, flashes of light are seen.

Sometimes there is a sense of great pressure, or tightness, in one part or round the head, as if the skull were pressed by an iron nail, or bound by an iron hoop.

"The action of the heart and arteries is morbidly increased; and there occur great palpitation and visible throbbing of the carotids, and sometimes even of the abdominal aorta, augmented to a still greater degree by every hurry of mind or exertion of the body, by sudden noises or hurried dreams and wakings. The patient is often greatly alarmed, and impressed with the feeling of approaching dissolution. The state of palpitation and throbbing are apt to change, at different times, into a feeling of syncope. The effect of sleep is in some instances very extraordinary; sometimes palpitation, at other times a degree of syncope, or an overwhelming feeling of dissolution. The pulse varies from 100 to 120 or 130, and is attended with a forcible jerk or bounding of the artery.

"The respiration is apt to be frequent and hurried, and attended with alternate panting and sighing. The movement of expiration is sometimes obviously and singularly blended with a movement communicated by the beat of the heart; the patient requires the smelling bottle, the fan, and fresh air. In this state of exhaustion, sudden dissolution has sometimes been the immediate consequence of muscular effort on the part of the patient.

"The phenomena of excessive re-action are mostly observed in young persons of robust constitution, who have been subjected to repeated blood-letting. In infants, in feeble persons, and in rather advanced years, re-action after loss of blood is for the most part defective. In this case the patient long remains pale, thin, and feeble, and becomes faint on the slightest occasions: the pulse is frequent, but feeble, and perhaps irregular: and we look in vain for the throbbing and palpitation observed in the young and robust. This state either gradually yields to returning strength, or subsides into the state of sinking. In the study of the effects of loss of blood, it is particularly necessary to bear in mind this difference of the phenomena arising out of the previous state of the constitution, whether of vigour or of feebleness." (P. 127—129.)

These symptoms, indicative of exhaustion with excessive reaction, may gradually pass away, or they may give place to *sinking*. In this, the sensibility is diminished, there is a tendency to dozing, with snoring; stertor, or blowing-up of the cheeks in breathing, a symptom which all must have observed in apoplectic affections. The patient is inattentive to what is passing around him; forgets his situation; requires a moment to recollect himself when spoken to, and soon relapses into dozing. In addition to these circumstances, our author has remarked "a crepitus in respiration, only to be heard at first on the most attentive listening:" this soon increases, passing

into rattling in the throat. There is some degree of labour in the breathing, inducing acuteness in the nostrils, and occasionally a peculiar cough. The heart loses its palpitation, and the arteries their throbbing; the stomach and bowels become affected with flatulence; the will loses its command over the sphincters; delirium, jactitation, and coldness of the extremities, mark the approach of dissolution. A very interesting and important case illustrates some of the phenomena above mentioned, which, however, is unfortunately too long for quotation.

III. Dr. Hall next considers the effect of further loss of blood in cases of exhaustion, and states his belief that the symptoms of re-action have frequently been mistaken for those of inflammation of the head or heart; under which impression, patients have been bled still further, the effect of this being the temporary relief of the symptoms. Here, as throughout the paper, we mark and bear testimony to the accuracy of the author's observations. It was some time before he could comprehend the nature of this fact, but at length he perceived that the symptoms relieved were those of re-action, and that the mode of relief consisted in the substitution of syncope. Yet, although relief be given for a time, the remedy eventually adds to the severity of the malady, in the majority of cases. It is to be observed, that re-action seldom supervenes from one depletion however copious; while the repetition of this is very apt to produce it. When re-action has supervened, syncope very readily follows any further loss of blood. "This fact is of importance, because it may be regarded as a sign of the state of exhaustion when obscured by the re-action of the system, and as a warning voice against further and inconsiderate use of the lancet." When the depletion is still further repeated, then not merely syncope, but sinking, comes on, and with it the train of phenomena already described.

IV. This section relates to the influence of various circumstances on the effects resulting from the loss of blood. Of these, the strength is the first and most important, the degree of re-action being in proportion to it. In feeble constitutions, as in infancy and declining years, the re-action is defective, and the state of syncope is one of danger, so that a repetition of the bleeding is borne with difficulty. Just the reverse of this occurs in the robust when the re-action is strong: in these, indeed, the state of sinking is preceded by great re-action, unless the strength be overwhelmed by the extent of the evacuation. Other circumstances exerting an influence over the effects of blood-letting, are certain diseases; and it is particularly stated by the author, that "intestinal irritation leads to those effects of blood-letting which I have described as exhaustion: whilst inflammation seems to protect the system from the effects of loss of blood:" so that, taking health as the medium, the presence of

intestinal irritation would lead to the more speedy, and of inflammation to the more tardy, occurrence of exhaustion.

V. The effect of loss of blood on the internal organs is very little known. The author conjectures that effusion into the ventricles of the brain takes place; and that there is, "even in cases of exhaustion from loss of blood, increased action or fulness of the vessels of the brain." There is certainly, in cases of great exhaustion from any evacuation, a tendency to serous effusion throughout the cellular membrane generally.

Dr. Hall purposes to investigate the *organic effects*, and especially the *remedies*, of loss of blood. To these we look forward with the anticipation of additional information upon this interesting subject.

The remaining contents of the volume consist of little more than cases, such as usually are, and ought to be, published in Medical Journals, rather than in the Transactions of a learned Society. Some of these we shall probably give in our Collectanea on some future occasion.—*Lond. Med. and Phys. Journal.*

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9. *Successful Case of High Operation for the Stone;* by A. Copland Hutchison, Esq.—The patient being placed on a mattress upon a table of ordinary height, with a pillow under his head: the pelvis raised considerably higher than his shoulders, with the view of removing the peritoneum as far from the parts to be cut as possible; while his feet rested upon chairs; standing on the right side of the patient, I made an incision, nearly four inches in length, with a scalpel, in the line of the linea alba through the integuments downwards over the front of the pubes; which latter step I found of great advantage, both during the operation and in the subsequent treatment of the case. The incision was carried on down towards the bladder, between the pyramidales muscles, and through the linea alba: the latter being first punctured, and afterwards cut *transversely upon the symphysis pubis*, dividing some of the fibres of the pyramidal muscles on each side as we proceeded, so as to give a more free passage for the extraction of the stone. I then, with a director, detached this tense membrane (the linea alba) from its subjacent adhesions, and divided it upwards with a probe-pointed bistoury, introduced into the groove of the director, until I could readily insert the fore-finger of my left hand, which is, on all occasions, the best director; and which was most conveniently done by standing between the legs of the patient. When about two inches and a-half of linea alba were thus divided, I thought we should have had sufficient space for cutting into the bladder, and extracting the stone; but, as the wound appeared deep and narrow, and there was a large calculous to extract, I cautiously extended the incision half an inch more, in the manner already described.

The bladder, very much contracted, was now clearly seen co-

vered by fat, and was raised through the fat, upwards and forwards, to the external wound of the integuments, upon the point of a silver staff, with a groove in its concave part, extending from close to its point downwards about two inches, and which I preferred to the *sond* used by the French surgeons, that instrument appearing to me both unnecessary and unscientific. The handle of the silver staff being held in a depressed position by my friend Mr. Brown, the anterior part of the fundus of the bladder was pierced from without, by a straight sharp-pointed bistoury, passing its point into the groove of the staff, and carrying the incision downwards and forwards to the pubes, until there was room for the fore-finger, which was introduced for the purpose of ascertaining the size of the calculus, that the opening in the bladder might be enlarged accordingly. Having satisfied myself on this head, I hooked up the fundus of the bladder with my finger, and enlarged the incision towards its cervix, sufficiently to admit of the free extraction of the stone. Some little difficulty here arose in disengaging the stone from its situation, notwithstanding the great assistance obtained by the introduction of the fore-finger of my right hand into the rectum, while the fore-finger of my left was in the bladder, to cant or turn the stone, so as to extract it by its smaller axis: and, indeed, this was not effected until the single blade of a pair of small stone-forceps was introduced. The stone being thus turned, it was easily removed with the finger and thumb. In point of fact, so firmly did the bladder grasp the calculus, that the idea was conveyed to our mind of its actual adhesion to the coats of that viscus.

One small cuticular artery was divided at the first incision, and secured at the time, to prevent the future steps of the operation being obscured by the bleeding, and the subsequent issue of blood into the cavity of the pelvis.

Two slips of linen, dipped in oil, were introduced through the external wound on each side of, but not into, the bladder. A gum-elastic catheter was passed into the bladder, so as just to enter its cavity, and no further, and was secured in this situation by tapes attached to the instrument, and to an elastic band, or retainer; which in this case was made of flannel, lined with calico. The sides of the wound were brought together by slips of sticking-plaster, and the parts supported by a flannel roller, passed three or four times round the pelvis and the lower part of the abdomen. The patient, by means of pillows, was placed on an inclined plane; a vessel was secured to the end of the catheter to receive the urine; and he had an anodyne drought administered to him.

I am fully aware that there are those who may imagine the trifling difficulty we experienced in extracting the stone, arose from the depth, narrowness, and consequently from the sup-

posed tightness, as it were, of the wound, through the parietes of the abdomen; but I can assure them that such was not the fact, for I enjoyed the most perfect freedom in that respect. The circumstance, in my mind, arose rather from the position of the stone, its size, and the strong contraction of the bladder upon it; for it will be borne in recollection that the bladder, in this case, had never been distended beyond the size of the calculous, and that which two ounces of urine would occasion. What the bladder wanted in capacity, it possessed in the increased thickness of its parietes, for it was fully a-quarter of an inch thick at the part divided; so that its muscular power must, therefore, have been considerable. I cannot avoid, in this place, repeating the great advantage to be derived from dislodging the stone in such cases, by the introduction of the finger into the rectum, and which appears to me a great improvement in this mode of operating.* *Letter to* Sir E. Home, Bart.—*Journal of Science*, October.

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11. *Non-Contagious Nature of Yellow Fever.*—Dr. Costa read, before the Royal Institute of France, a memoir on this subject. The facts and observations related in this work have been collected from the sources of the disease; Dr. Costa having been physician to a lazaretto. After describing the state of affairs at Barcelona, and the precautionary measures adopted on the frontiers, which he considers as very inefficient, had contagion really existed, the author does not hesitate to affirm that the disease is not contagious. Nay, so persuaded is he of this fact, that, together with MM. Lassis and Lasserre, he proposes to make experiments on this subject. He requests that clothes which have been worn by persons who have died of the disease, may be sent to him from the Havannah, or wherever the disease is found to exist: these clothes, hermetically sealed during the passage, shall be worn by these gentlemen, without making use of any disinfecting medium.—*Revue Medicale*, Août.

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12. *Alteration in the Bones of the Head.*—A report was made by MM. Emery, Ribes, and Murat, upon a diseased cranium, presented by M. Duvergie. This cranium belonged to a veteran, who had died of disease of the heart. There was a considerable thickening of all the anterior part of the frontal bone, of the ethmoid, and part of the sphenoid bone. The projections which the internal plates of the frontal sinuses and the crista galli made, had displaced the optic nerve on one side; and, nevertheless, no leison of vision had occurred during life.—*Ibid.*

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* The patient did well, recovering very speedily.

13. *Dropsy of the Epiploon, in a Fœtus of eight months.*—Dr. Ollivier, who relates this case, commences by remarking that it is now clearly established that the fœtus in utero is subject to nearly the same maladies that are occasionally developed after its birth,—such as phlegmasiæ, &c. and some more particularly connected with the situation of the fœtus in utero. A woman, whose health had been constantly good, was brought to bed, at the end of the eighth month of her pregnancy, of a dead child, but which was well formed. Dr. Ollivier was much struck with the enormous size of the abdomen, the thin parieties of which rendered the fluid which distended it perfectly visible. On opening the abdomen, some spoonsful of a yellow and transparent serum escaped; the peritoneum was colourless, and had no appearance of vessels. The cavity of the abdomen was entirely filled with a transparent tumor formed by the epiploon, the layers of which were separated by a serous, yellow, limpid fluid, contained between them, and in the midst of which flocculi of albumen floated. The surface of the tumor was marked unequally by the vessels which ran in the substance of the epiploon, and which thus formed several irregular, inelastic bridles or bands. The posterior layer was in one spot slightly opaque; the remaining portion possessed its usual transparency. The foramen of Winslow was completely open; and it is presumed that the small quantity of water which escaped from the cavity of the peritoneum had found its way by this aperture. All the viscera of the Abdomen were otherwise sound.—*Archives Generales*, July.

14. *Encysted Tumors in the Abdomen.*—M. Andral (fils) communicated to the Royal Academy of Medicine the following fact:—A man was admitted into La Charite with a tumor in the abdomen, filling both the hypochondria and the epigastrium. Some months previously he had felt dull pains in the right hypochondrium, and had the jaundice. He died at the end of some time, having suffered by turns the symptoms of phthisis, of enteritis, and peritonitis. On opening the body, tubercles were found in the lungs; a sero-purulent fluid, with false membranes, in the peritoneum; redness of the large intestines: besides the three following diseased appearances:—1. A tumor of the size of a full-grown fœtus; head situated between the right kidney and the concave surface of the liver: it appeared to have originated from the peritoneum. its parieties were fibrous, and it was filled with a purulent fluid, in the midst of which the remains of hydatids were floating. M. Andral believes that this cyst had originally been an hydatid sac, in which hydatids had been successively broken, destroyed, and replaced by pus. The tumor had displaced the liver, which, driven out of the right hypochondrium, filled the epigastric region, and formed a prominence on the left side; besides which, the right lobe of the

liver, pressed by the tumor, had suffered a complete atrophy; whilst the left lobe had increased in a very unusual degree. 2. A second cyst, filled equally with broken hydatids, was situated on the course of the biliary vessels, and compressed them. Around and between the broken membranes of the hydatids, there was a quantity of suety matter, similar to that which is sometimes found in ovarian cysts, where it is usually mixed with hair. 3. An old and solid coagulum, which completely obstructed the vena cava inferior, from the origin of the renal vessels to a little above the primitive iliacs. This clot resembled those fibrous layers which fill the sac of aneurisms. The parietes of the vein had suffered a remarkable thickening, as if the result of chronic inflammation: nevertheless, there was not any œdema of the lower extremities.—*Archives Generales*, August.

15. *Aneurismal Diathesis.*—M. Chomel presented to the Royal Academy of Medicine a heart, with its aorta, upon which that alteration of tissue constituting the principle of aneurism was found extended over a considerable surface. The heart was rather larger than natural; the parietes of the right ventricle thicker than those of the left. The aorta was uneven throughout its whole extent; and these inequalities were caused by white patches, semi-cartilaginous, which formed the greater part of its surface. From its origin to the distance of three inches and a-half, it presented three hollows, circumscribed by a marked projection; one on the right side, a second on the left, and a third above the former. These depressions, from six lines to an inch broad, and from two to eight lines in depth, had only cellular tissue for their Parietes, or the internal tunic of the artery thickened, and preserving no distinct structure. Even this tissue had suffered the same alteration in a portion of its circumference.—*Revue Medicale*, Août.

16. *Softening of the Stomach.*—M. Ferries presented to the Royal Academy of Medicine two cases of softening of the stomach. In one, the alteration was not announced during life by any remarkable symptom, which renders it more doubtful whether it always be a consequence of inflammation: the patient was merely affected with scurvy. Could that disease have been the cause of the softening?—*Ibid.*